The Washington Press

THE ALAMEDA COUNTY PRESS

California Associated Farmer Section

FARM SECTION NILES, ALAMEDA CO., CAL., FRIDAY, DECEMBER 5, 1913. FARM SECTION

EIGHT AND ONE-HALF TONS OF SUGAR BEETS

The harvest of sugar beets from the time they are in proper condition for delivery at the factories is prosecuted with great vigor in the beet growing districts. "California's Sugar Harvest," by P. L. Edwards, in this issue, which will be followed by a story on uses and values of dried beet pulp, will help our Farm Section readers to grasp the importance of the sugar beet industry in California.

HANGING BASKETS.

Maggie Downing Brainard.

Everyone who has a greenhouse can have by early spring pretty hanging baskets with but little trouble.

Line your baskets with fresh moss, fill with good leaf mold and plant either alyssum or lobelia seed in them. Dwarf nasturtiums are also fine.

Hang the baskets in the greenhouse and keep them moist.

By the time the frosts are gone in the spring your baskets will be filled with blooms and ready to hang on the porch or in your sitting room.

Submerge once a week in a bucket of warm water, which may contains a little ammonia and you will have the prettiest hanging baskets in the country.

Gasoline or Distillate for Dandelions.—Try dropping some gasoline or distillate on the corwns of dandelion with a squirt can. It is claimed to be effectual.

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"Sweet Pea Culture"

It is free for the asking. It contains valuable information on the Sweet Pea, gives carefully prepared directions for sowing the seed, and contains full descriptions of some of the newer and better known Spencer and Grandiflora varieties. This book is one of the most authoritative works on the Sweet Pea in existence.

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is now ready for delivery and contains a list of our new bulb stock. Sent to any address free of charge.

We are booking orders now for plants and trees. A special list of nursery stock will be mailed on request.

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SOUTHERN PACIFIC

THE FLOWER GARDEN

CARNATION CUTTINGS.

How to Grow Them.

Maggie Downing Brainard.

AS we have said before, we lay down no arbitrary rules for people who have already successfully followed out methods of their own. We only want to help those who don't know how to grow flowers, by giving, in odd chats our own experience on lines in which we have succeeded.

Our plan for planting and growing carnations from cuttings grew out of a year's close study of the American Carnation society's instructions given at their periodical meetings; ideas and methods interchanged among the members for their own benefit.

Out of this course of study we sifted and practiced the following for:

Growing Carnations in a Greenhouse.

First and most essential thing to be looked after is a right beginning by the choice of healthy stock; specially, strong stock if you are a novice, say, not delicate like the buttercup. I mention the buttercup because like most delicate species it requires bottom heat to insure growth.

Before taking cuttings from a plant, examine the roots, stems, base, of some of the same varieties for diseases of any kind. If the least suspicion of unsoundness appears let all such varieties alone, for the cuttings even when rooted are liable to give unsatisfactory results.

The next thing to be looked after is uniform heat and perfect ventillation of the house, otherwise, all the care bestowed on your cuttings will be useless, leaving you to wonder why you have failed.

Preparation for Planting.

Select the center of the greenhouse for your bench or cutting bed; carnations love light.

Give a thick coating of whitewash to the long box which is to hold the bed; put it on thick both in and outside.

When dry, fill in with three inches of rich potting soil. The soil foundation is to supply food and moisture for the cuttings when rooted so they can remain in the nursery rows much longer without injury than when the bed is all sand—the old way.

Over the Top.

Of this soil, spread two and a half inches of clean sand. Beat to a level, solid mass.

Cuttings, How to Take Them.

Plants are livliest, early in the morning or on cloudy days; take cuttings then. Wet thoroughly; cover with damp sand until ready for use; never let them wilt for it takes them some time to fully recover.

Side Shoots on Flower Stems.

Here, the American experts in the trade seem to differ in their selections for cuttings.

Some say the side shoots from the flower stems; others contend, good healthy cuttings from any part of the plant does just as well, allowing two to three joints to a length.

Essential Point.

See that the plant is in that state that will permit of the slips, snapping instead of bending. Slips root much more readily then.

Cuttings Ready.

Taut a string across the bed from one end to the other. Follow this with a drill, one inch deep, made with the point of a trowel in the firmly-packed sand.

Drills should be two and a half inches apart.

Lay the cuttings in the drills, two and a half inches apart each way.

Ready to plant, stand each cutting erect and with thumb and middle finger draw the sand about it, covering one half its length; then pack the sand firmly about it. The firmer you pack the sand the surer you are of having your slips to grow, for the air must be excluded about the end of a slip to make it root. Any expert gardener will tell you that.

When all the bed is planted, drench it with clear water. Be careful to let this drenching be between the rows for top spraying has been known to create fungus.

Shade the Bed for ten days, two weeks is even better, after which give lots of sunlight, being careful never to let them dry out.

This shading is necessary for a strong healthy start to the roots. Cuttings thus treated are almost sure to succeed.

Do Not Try if you are a beginner in raising greenhouse plants, any but the strong hardy strains. Experience, later, will teach you how to manage bottom heat, etc, that the delicate varieties require.

Temperature of the greenhouse should be about 50 degrees, night time, and from 60 to 65 during the day. No fluctuating is admissible.

Fungus in our case, this formed from top spraying. After we learned to spray between the rows, to keep the temperature as above and was more careful about proper ventillation, we had no more fungus.

Cuttings Now Rooted and finely growing, top the plants. Top as soon as large enough to sustain a compact growth. When the slips are beginning to show signs of making a bloom bud is a good time to pinch back. Plant growth is stronger when the pinching is not done too early.

Go Carefully over the bed before topping and pull out every sickly dwarfed slip. Indeed, the bed should get this examination every two weeks.

You see, by weeding out the second-rate stock, the best material has a better chance to reach perfection. The better condition a plant is in, the more readily it eats and drinks, and should the more readily give flower and fruition.

This Treatment will insure vigorous plants for early spring blooming in the open ground. If for pot culture, at any time after the slips have well rooted, transplant out of the bed to pots, two and a half inch pots, filled with heavy soil. Then as the slip grows change to the next sized pots, always remembering the rules given for changing in our instructions, for "Pot Culture." "Plants Bloom Better in Small Pots."

DESIRABLE ROSES FOR CALIFORNIA.

By Helen King.

NOVEMBER is the month in which you should plan for adding roses to your collection. They may be set out now with good results. With a start in November, the rains that follow will keep them growing and will insure early spring blossoms.

There is an almost countless number of varieties, each seedman offering many that the other seedman do not list at all. A few of the best are here listed and are grouped according to the use for which they are adapted.

Among the best climbing roses are the following:

Crimson rambler; Wm. Allen Richardson-orange yellow; climbing Kaiserin Augusta Victoria-white; Rein Marie Herriette-cherry red; climbing Hermosa-delicate rose; Cecile Brunner-salmon pink; prairie queen-rosy red; Glorie de Dijon-buff.

There is quite a list of roses which are dwarf enough to be used in borders or in beds. Some of the best of these are the following:

Agrippina, rich crimson; Alice Roosevelt, deep pink; Bride, white; Madam Lombard, red; Papa Gontier, red; Safrano, yellow; American Beauty, pink rose; La France, pink; Sunset, yellow.

Some of the still more drawfed varieties that are suitable for edges are these:

Baby Rambler, bright crimson; Annie Marie de Montravel, white; Mignonette, pink; Scheikopf, white; Clothilde Soupert, pink.

The best way to buy roses is to have them shipped in pots. When they are received, dig a hole in the place where the rose bush is to be set. Make the hole much larger than the pot in which the rose is received; see that the soil is mellow. If it is, spade it up and mix with it some well-rotted manure. If necessary, throw in a little sand to make the soil more porous. When you have a good bed on which the roots may rest, remove the plant from the pot by turning it up-side-down and jaring slightly. Set the plant in the hole and throw dirt around it. Water thoroughly and pack the soil firmly.

THE GOPHER PLANT.

By M. D. M.

For the benefit of an inquiring subscriber interested in the gopher plant we have this to say:

The gopher plant, known to botanists under the name of "Caper spurge" is a plant that should be judiciously handled.

The fresh milky juice is acrid, the fruit or (capsuled seed) is purgative in nature and poisonous. The juice applied to the skin reddens it, causes itching and pimples; the seed taken internally, (say, accidentally by children) inflames the mouth and stomach and causes diarrhea, also, vomiting.

The plant does good work as a gopher exterminator. It is a common garden plant sparingly used in California and Texas and in the Atlantic states, from New Jersey to the Carolinas, as a rodent exterminator.

A full description of this plant, its effects and properties, is treated in Bulletin-form and sent from Washington agricultural department to any one sending address and postage for mailing.

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California Associated Farmer

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The Editor of the Farmer invites correspondence from any reader upon any subject that may interest country people, or have a bearing up improvement of conditions in rural life.

All departments of this paper are open for the approval or disapproval of its readers and a free expression of opinion is invited.

THE NATIONAL GRANGE MEETINGS.

NEWSPAPER reports of the meeting of the National Grange, P. of H., which was held at Manchester, N. H., during the two weeks ending November 22, show that it was perhaps the largest and most important session ever held.

The National Grange was organized in 1867, therefore this last session was the forty-seventh, and although this organization of farmers has had its ups and downs in point of members, the order as a whole has moved steadily forward, ever working for the betterment of the American farmer and the upliftment of the country people in particular and the nation as a whole.

"To inculcate a higher and better manhood and womanhood among ourselves" is one of the most important objects of the organization, and that success has rewarded its efforts is very evident to all who have been in close touch with the order since its beginning.

Standing, as it does, upon the broad foundation of the brotherly love for all mankind and having for its motto, "In essentials, unity; in non-essentials, liberty; in all things, charity," its work has been of an enduring character and its achievements of great benefit not only to its members and farmers generally, but to the whole United States.

Increased Membership Means Prosperity.

It is a source of gratification to members of the Grange to see the reports of an increased membership and the enthusiastic reception at Manchester. When nearly 6000 Grangers will take a journey to New Hampshire and take the seventh or National Grange degree it would seem that the interest in the Grange means more effectual work than has heretofore been accomplished. Thirty-one states were represented at Manchester, each by a state grange master and his wife, Mr. and Mrs. Joseph Holmes of Sacramento representing California.

In Mr. Wilson's address, part of which appears in this issue of the Farmer, he discusses co-operation, postal improvement, federal aid for road improvement, conservation of national resources, regulation and control of railroads and express companies, a fair system of agricultural credits, international peace, etc., all of which had consideration by the National Grange.

Without doubt the National Grange will meet in some California city in 1915, offers of ample accommodations having been already made by San Francisco and Oakland, and in this connection it may be of interest to Californians to know that headquarters will be maintained in the California building, where all grangers visiting the exposition will be registered.

The bringing of this representative farmers' organization to California cannot fail to be a benefit to the state, and that they will be properly welcomed is assured.

Lodi Grapes—One thousand seventeen hundred and fourteen cars went east and averaged over $1000 per car and more than 50,000 tons of wine grapes sold for from $10 to $18 per ton, altogether making a neat total of $2,250,000.

PATCH ROADS AFTER A RAIN.

ROADS that had been used and considered in fair condition before the winter rains began soon developed weak spots under the softening influence of the rain wherever it could not immediately run off. Chuckholes of all sizes were greatly in evidence after the first rain, and the roadmaster or caretaker who got busy immediately with scraper or drag and smoothed off the roadsides, allowing as much water as possible to escape, and followed it up by filling every hole with fine gravel, surely knew his business.

We have some such protectors on our public roads, and of such we may say that they do not waste our road tax, and what is even more important we have good, smooth roads to travel over.

The agitation now going on all over the country, all of which calls for better roads, will no doubt be the means of the discovery that many of our California gravel roads may be kept in first-class condition by proper care in scraping and patching.

To build a road costing thousands of dollars per mile and then allowing it to go to pieces when a comparatively small expense will keep it good, is an unwarranted waste of public money. Whether it be the swiftly-moving motorcar or the heavily loaded wagon that injures our roads the most is immaterial so far as the need of prompt repairs is concerned.

The stitch in time was never more in evidence than in the case of our public highways, and for most of our graded and graveled roads there is no time more opportune for patching than immediately after a rain.

A NOT UNUSUAL HAPPENING.

A FARMER living several miles from town in a rural district had several bushels of first-class seed rye more than he needed, so one day he drove to town and approached a seed dealer and sought to negotiate a sale. The dealer replied that seed rye was a drug on the market and that he didn't want to buy, but finally offered 80 cents a bushel. The farmer demurred, submitted, pocketed his money and drove home to his farm. This was in the forenoon.

After dinner the same day another farmer found himself short of seed rye, so drove to town and called on the same dealer. He was told that good seed rye was very scarce, but that some was available and that the price would be $1.50 per bushel. The farmer demurred, submitted, paid his money, drove home with the rye and sowed it. And the force of all this episode is found in the fact that the farmer who sold his seed rye at 80 cents a bushel, and the farmer who bought the same rye back again at $1.50 a bushel all in one day, lived on the same street and less than a mile and a half apart!—Grange Monthly.

The instance related above is in line with many similar deals that are occurring although they do not all get into the papers. The case of the man who sold his potatoes with the help of a commission man and wishing to get new seed ordered of the same commission man "some of the best potatoes to be obtained" and received back some of the potatoes that he had sold through the same agency but at a much higher price. He knew them for sure, because he found his glasses in one of the barrels where he had dropped them when he was barreling the potatoes.

These are some of the errors in business that the Grange is working to correct and that it is succeeding in a large measure among its members is evidenced by the improved business methods of grange members.

That the expense of sustaining the grange pays in dollars and cents is unquestionably true even if the many corporative business arrangements which are entered into were not counted for he would indeed be stupid who did not profit by the experiences of his neighbors so freely expressed at grange meetings.

Pigs and Pumpkins by Parcels Post—A dressed pig already for the oven passed through the postoffice at Campbell, Santa Clara county, recently. The pig weighed nine pounds. Also a rancher at Tulare sent his friend at Dinuba a pumpkin weighing eleven pounds.

SIXTH NATIONAL CORN SHOW.

EXHIBITS at the National Corn Show at Dallas, Tex., February 10-24, 1914, will include corn, cotton, cereals, grains, forage crops and all other important farm crops.

Its objects are to encourage and improve agricultural methods; to hold fairs and assist other organizations in holding exhibitions of the products of the soil; to collect facts and other matters that interest or benefit farmers and cause the same to be published and to hold farmers' conventions for the discussion of agricultural matters.

The Colorado national oat trophy valued at $1500, is offered for the best peck of oats.

The Kellogg single-ear corn trophy, valued at $1000, is offered for the best single ear of corn.

The Indiana corn trophy, valued at $1000, is offered for the best ten ears of corn.

These three prizes are open for competition to the world.

The word "corn" is used in a broad sense in connection with the exposition, to cover all farm crops, the modern machinery necessary to produce them, good roads to take them to profitable markets and good homes for their producers.

Comfortable and conveniently-arranged rural homes will claim special attention at the Sixth National Corn Exposition, and how to reduce the cost of their maintenance will be fully demonstrated. An important display will be the instructions and instruments to enable the housewife to detect the adulterated from the pure foods.

CALIFORNIA FOR CORN.

VERY little has been written comparatively as to the standing of California as a corn state, and the reason may be because of the attraction to other branches of agriculture that have promised better returns for capital and labor invested.

That corn may not become a profitable crop and a much larger one in future years is not at all improbable.

From the department of agriculture's crop report dated November 1, 1913, it appears that California produced the present year 1,485.000 bushels of corn as against 2,463,017.000 bushels in the United States.

Also that the yield per acre in California is 33 bushels per acre as against 23 bushels in the whole United States, and the quality 86 per cent against 82 per cent in our whole country.

These figures are illuminating and should compel attention and careful thought of California farmers who are looking about for ways and means to make the farm pay.

That California has a climate peculiarly adapted to the growing of corn is unquestioned and that our rainless summers permit of its growth and maturity uninjured by storms or rains is a big factor in favor of a more general growing of corn. That the quality of the corn is 4 per cent higher than the average of all the corn-growing states must necessarily carry with it high quality of the corn fodder and as corn is not equalled by any other crop for silage it would seem wise for our farmers to test its value more fully on their particular soil.

The Stayman Winesap—In points of quality and various uses this apple stands in front rank with the best varieties of standard apples. It makes a good-sized and shaped tree, bears good crops, is of a good size and has a rich "winesappy flavor that is particularly agreeable to most people. It cooks well wherever put, making a sauce with a yellowish tinge so much prized by many apple epicures.

Langshans Wanted—A reader is anxious to get some stock or eggs of a good strain of Black Langshans. It seems that in the scramble for new breeds some of the older and in some instances more meritorious breeds have been neglected. A line addressed to the California Farmer, 24 West Santa Clara St., San Jose, will be forwarded.

THE ULTIMATE RESULT.

IF to obtain credits on report cards at school and even have them count as a factor in the pupil's promotion from one grade to another, was all that could be accomplished by the establishment of the industrial credit system in our schools, then one might reasonably question if the time and effort required to educate parent, pupil and teacher in the proper use and marking of such credits would be worth while.

However, the ultimate result is far more important and must accomplish greater things than mere progress in school studies or the cheerful awakening to lively interest in home duties.

These are only the vehicle upon which may grow the fruits of industry and morality that will forever elevate and protect the child from all of the frivolous, immoral and vicious tendencies which are the inheritance of the half-educated, indolent and incompetent young men and women who, although armed with a diploma, have little knowledge of the real, practical problems of life or the guise in which temptations to wrong-doing will appear.

WHERE TO GROW "CHUFFAS."

THE recent item in the Farmer regarding this new big food has created much interest and inquiry. One grower of alfalfa and incidentally a breeder of hogs, was interested because he was looking for new foods to feed with alfalfa, being convinced that a hog would keep healthy, grow fast and make better pork if a varied diet was provided.

No doubt his conviction was well grounded and it is just possible that most of the cholera which has carried off so many California hogs might be avoided if a varied diet was adopted.

Moist Soils Necessary—Mr. Samuel Haigh of San Jose writes as follows:

"Chuffas have been grown in the southern states for more than 50 years. In the 'Wisconsin Farmer,' August, 1859, number, an article taken from the Alabama Cotton Planter claims that they are excellent food for poultry. They grow best in naturally moist soils and will not do well in this valley, as I know from experience. It is too dry for them." SAM HAIGH.

There is no doubt about the necessity of a constantly moist soil to grow chuffas, as the bulbous roots, like other bulbous or tuberous crops must have continuously moist soil to grow and mature.

But this being true does not mean that the growing of chuffas may not be possible and profitable on any lands when irrigation may be practiced.

The fact that the hogs gather the chuffas by rooting for them is favorable towards a trial.

DATE-GROWING IN CALIFORNIA.

WE have written and talked of rice and cotton ever since these fine products of Butte and Imperial made good in such abundant measure this year, and now that they have become comfortably established as among California's products of the soil, and in order, so to speak, "to keep up the applause," that rich, nutritious and altogther wonderful Oriental fruit, the date, is knocking at our borders for admission as an added number to our already overflowing cornucopia of fruits.

We have on our desk "Date-Growing in the Old and New Worlds," by Paul B. Popenoe. This is a handsomely bound book of 300 pages with 40 full-page illustrations, and gives a clear and practical account of growing the date palm.

The author declares that he traveled 40,000 miles in the principal date-growing regions of the world and occupied two years in the study of the subject.

He describes 90 varieties of dates and deals with climate, cultivation, irrigation and marketing, as well as food value, digestibility, medical uses and consumption of dates in the United States.

Without an extended review, a fair knowledge of Mr. Popenoe's book may not be had, but to all who are interested in dates from any standpoint it will amply supply their wants and may be had for $2, plus 16 cents postage, by addressing West India Gardens, Altadena, Cal.

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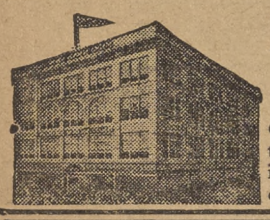

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AGENTS WANTED

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SPRING NOTCH

GOATS QUICKLY KILL YOUNG TREES.

By Howard C. Kegley.

WHEN a man's away the Nans will play. Ergo it is well to fortify the fruit trees if one intends to keep goats on the place.

Some people keep their goats tethered by the roadside, while others confine them in a lot. In either case it is wise to build a fence around all of the fruit trees that one cares to keep. Make it a substantial fence, too, and high.

The accompanying photo shows what happened when a California goat farmer was away from home one day. His young fruit trees were enclosed by poultry netting, but it wasn't substantial enough. The goats got hungry, and during the farmer's absence they butted a hole in the fence, entered the enclosure, and barked a valuable pear tree to a height of seven feet. A quick camera caught the doe and her two kids partaking of a pear-bark dinner. Their short stay within the enclosure spelled a $10 loss to the farmer.

Goats are profitable animals, but it is well to keep a watchful eye on them. To be on the safe side, fence your trees with woven wire that is heavier than poultry netting.

MIXED FARMING IS BEST.

One great advantage of mixed farming is the fact that a man and his family can attend to the work, which occupies them pleasantly the year round, while the special farmer, with but one crop to depend upon, has to cultivate a larger area and hire help during the short periods of seeding and harvest, and has nothing to occupy his time the remainder of the year. Large farms and specialties in agriculture should only be attempted by men of sufficient means to tide over long periods of unproductive idleness

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SPRAYING WALNUTS

SPRAYING WALNUT TREES FOR BLIGHT AND APHIS CONTROL.

By Ralph E. Smith, assisted by T. Francis Hunt and W. H. Nixon.

THERE are many orchards of thrifty, large seedling walnut trees in the state, particularly in Santa Barbara, Ventura, Los Angeles and Orange counties, which would be much more profitable than at present were it not for the attacks of walnut blight and aphis. The development of new walnut varieties more resistant to blight present no relief to the owners of these groves, since most of their best walnut land is already occupied by large trees, and these trees, moreover, are of a good commercial type and would yield very good returns save for these two pests. The only apparently feasible means of combating blight and aphis on such trees lies in the development of some practical spraying method.

The necessity of controlling aphis as well as blight is apparent to every walnut grower, since this pest has in recent years become really more serious than the much-dreaded blight. Spraying experiments carried on by the division several years ago seemed to show the impracticability of controlling blight by spraying, on account of the time and expense required for treating such trees by ordinary spray methods. Recent developments, however, in sprayers and nozzles have made it possible to spray large trees more quickly and cheaply than could be done a few years ago, and we therefore decided last year to try out again the possibilities in this direction. In this connection a considerable acreage of walnut trees was sprayed, using various methods and mixtures. As a result of the work it may be said in brief that one method gave particularly promising results, especially in the control of the aphis. This method consisted in spraying the trees while they were in a dormant condition with lime-sulphur solution.

Effect on Blight.

The results of the spraying upon the walnut blight were difficult to establish on account of the slight occurrence of the disease in the sprayed districts during the past season. In this respect the work was inconclusive, although there appeared to be at least some blight control by the lime-sulphur spraying. It is further to be said that there is some experience to indicate that continued spraying with the lime-sulphur for two or three seasons gradually decreases the amount of blight.

Effect on Aphis.

Walnut aphis has in recent years become a worse pest than blight in many of the most important districts. This insect spreads the blight and multiplies its infections by carrying the germ as it crawls about the trees, Further, it reduces the vitality of the tree, checks its growth, reduces the size and weight of the nuts and contributes to the occurrence of "perforation," 'stick-tights" and other conditions which decrease the crop and increase the cost of handling the nuts. The effect upon aphis of spraying trees with lime-sulphur during the winter time has been well marked in our work during the past season. Well-sprayed trees remained comparatively free of aphis long after the insect had become abundant on unsprayed trees. The nuts of sprayed trees were larger and cleaner, the foliage cleaner and more vigorous looking, and the growth of the trees continued later in the season. The spraying was done in each case upon a few rows surrounded by unsprayed trees, and from the latter the aphis finally spread to some extent to the trees which were sprayed. It is reasonable to expect that if the whole orchard had been treated the aphis control obtained would have been still better. The results of these experiments were so promising that we feel justified in carrying the work farther and urging growers to take up the work on their own account during the coming season.

Formula.

Our best work was done with the following mixture:

Commercial lime-sulphur solution	5 gallons
Quick lime	25 pounds
Water	95 gallons

The lime is slaked, strained and then added to the mixture. So far as we know, the addition of the lime is not necessary to the effect of the spray, but this was added in order to make it easier to see it upon the trees. The trees are usually large, and without the addition of lime it is very difficult, especially for inexperienced workmen, to cover the trees thoroughly without missing more or less of the twigs and branches.

Time of Spraying.

The work was intended to be done while the trees were in a dormant condition—i. e., during the months of February and March. The solution burned the foliage severely if any leaves were out when the work was done, but it is possible that the aphis is more susceptible at this time.

Outfit.

In order to spray by this method a power outfit must be used which will maintain a constant pressure with two lines of hose of 200 to 250 pounds. A pressure of 200 pounds at the very least is necessary in order to cover the tops of tall trees thoroughly by this method.

In regard to nozzles, our best results were obtained by spraying the trees with the so-called M. A. C. nozzle—a special nozzle made in the east for this sort of work. Some preferred using an outfit with two lines of hose, one man spraying the upper part of the trees with this nozzle while the other sprayed the lower parts with an ordinary Bordeaux or Cyclone type of nozzle. The largest walnut trees can be sprayed entirely from the ground by the use of the M. A. C. nozzle if the proper pressure is maintained.

Method.

The whole success of the work depends upon thoroughly coating the trees out to the tips of the smallest twigs with the spray solution. This, with large walnut trees, is a somewhat difficult and laborious task and also an expensive one. By using the type of nozzle suggested, however, and working with intelligence toward covering all the growth quickly and at the same time thoroughly, workmen can acquire much skill in this respect and the work can be done economically enough to more than justify its expense. Herein, however, lies the whole secret of the operation—that is, spraying rapidly yet thoroughly.

Amount of Material Required.

In our work last winter the amount of material used varied in different places from 25 to 67 gallons per tree. These were trees of varying size, but it is still to be considered that as the work progressed and the workmen became more experienced it became possible to spray larger trees with a smaller amount of material and at the same time to do the work even more thoroughly. It may be said upon this point that about 25 gallons of spray to a tree will be required to cover fair to middle-sized walnut trees thoroughly—that is, trees of average size up to about ten years of age—while large trees will average about 40 gallons per tree.

Time Required.

With a power sprayer having three men on the outfit and another to mix, or seven men to two outfits, we averaged about 85 large trees per day to each outfit. In one case an average of 110 fair-sized trees per day was made, while in another case 40 per day was averaged for trees of the very largest size. The time required varies naturally with the facilities for loading up. In our work the spray outfit went after its load each time to the mixing station and the distance thus covered varied in different places. A little time could be saved profitably in extensive work by hauling or piping the mixture out to the spray rig in the orchard.

Expense.

Materials were purchased at a price of $10 per 50-gallon barrel of commercial sulphur-lime solution and $1.10 per hundredweight for lime. On this basis the spray in the proportion recommended above cost $.01275 per gallon. The expense of application was estimated on the following basis for each power outfit:

	Per day.
Four men at $2 each	$ 8.00
Two horses at $1 each	2.00
Depreciation of outfit	2.00
Oil and gasoline	1.00
Total	$13.00

On this basis the expense of application per gallon varied from $.004 to $.007. Assuming an average expense of application at $.00525 and that for material at $.01275, we get a total expense of $.018 per gallon on the tree. At this date 25 gallons per tree would cost $.45, while 40 gallons would cost $.72 per tree, total expense of material and application.

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Consideration of Expense.

It will be seen that the cost of this work is by no means prohibitive if even a moderate degree of blight and aphis control be obtained. It is also to be considered that beneficial effects would almost certainly be cumulative, so that after spraying trees for two, or at most three, successive seasons the work could very probably be discontinued for a year or two without throwing the trees back into as bad condition as they were in the beginning.

Furthermore, it is altogether probable that the cost estimated above could be reduced to a considerable extent by carrying on systematic work on a large scale. In the expense for material and labor the cost of the commercial lime-sulphur solution amounts to an average of about 55 per cent of the total cost. The labor item averages about 30 per cent of the total and the lime makes up the remaining 15 per cent. It is probable that the lime could be omitted altogether when the workmen became skilful enough to spray the trees thoroughly without such an indicator to make the material more easily seen. This, so far as we know, is the only object of using the lime. The lime-sulphur solution is estimated at the prevailing retail price and it is possible that by buying in large quantities (for instance, through walnut association) a better rate could be obtained. It is also possible that the associations or even the growers could prepare the materials themselves at a lesser cost than that estimated. The labor item will be reduced as the workmen become more skillful and could also be lessened to some extent, at least in large work, by arranging to deliver the material to the spraying outfits in the orchard more rapidly than was done in our experiments. Two experienced men could spray and run the outfit rather than the three which we have estimated. One man could also mix the spray for a number of outfits. The amount of material used per tree can also be reduced somewhat as the workmen become more experienced. Altogether, it appears to us possible that the expense of spraying trees of average large size by this method may ultimately be reduce to about 50 cents per tree. We do not, however, look for much further reduction than this, unless some much cheaper spray material is found to be effective. The work cannot be done properly without using comparatively large amounts of time and material. At $.50 per tree a very moderate degree of success in aphis control alone would be a most profitable investment in the increased growth of the tree and yield of nuts, as well as the improvement in quality and reduction in cost of handling the nuts.

Further Work.

We recommend to large growers and associations especially that work along this line be taken up during the coming season, in order to test more fully the value of this spraying. We recommend that entire orchards or blocks of trees be sprayed, in order that a more complete test may be obtained than that which results from spraying a few trees or rows in the midst of other unsprayed trees. We do not guarantee spectacular results from such work, but do believe that if it is done thoroughly the effect will more than justify the expense. On the part of the university we expect to continue experimental spraying another season, testing some other promising materials, and will also agree to furnish co-operation to all who undertake the work to the extent of general oversight, information and suggestions. We should also be glad to take up the matter of the purchase of apparatus with all who contemplate walnut spraying in order that they may obtain the right sort of appliances and have them in ample season.

DATE CULTURE

DATE-GROWING ON COLORADO DESERT.

By Chas. H. Meiers, Sawtelle, Cal.

THE importation, by Paul B. Popenoe of Altadena, Cal., of 17 carloads of date palm offshoots from Asiatic and African deserts recently, the perfection of a method of artificial ripening and the discovery of a spray (the mealy-bug mixture) which effectively serves to eliminate the scale insects that have threatened the industry, are incidents which have linked themselves together, forming a chain that has served to lift the date-growing enterprises into prominence, where it now stands as a great boon to the inhabitants of the Colorado Desert country—the date garden of America.

Mr. Popenoe combed the famous date countries of the old world, selecting the most adaptable varieties of offshoots for importation, and has himself established an orchard of 320 acres in the Coachella Valley, Cal., in the heart of the recognized date district.

With the obstacles which have menaced the success of the industry removed by experimentation, a number of large date gardens are being established this year. And it is not surprising, for there is a chance to make a very handsome income from a good date garden. Conservative men who have had extensive experience in the business say that from $450 to $600 an acre is as low as they can see fit to estimate the income.

The manner of arriving at this estimate is regular and the estimate on production is upsheld by all of the leading authorities on the subject. Fifty date palms is the usual number of trees planted to the acre. In moderate bearing a tree will bear no less than 100 pounds of dates. At 20 cents a pound—a figure that has often ruled in the market—the income would be $1000 an acre. For the sake of conservatism, mishaps and cut-in-two prices, set the figure around the $500 or $600 mark, and what is the matter with the enterprise as a good money-maker?

Ralph D. Cornell, who recently made an exhaustive study of the date as adaptable to the conditions obtaining in the Coachella, Imperial and Yuma Valleys, for the Chuckawalla and Palo Verde Irrigation association recites some interesting facts relative to the subject in his report to the association, from which a few paragraphs may not be out of place as following here:

"The Imperial, Coachella and Colorado valleys are the regions in which date culture has proven its worth and where are now to be found bearing orchards and thousands of newly-planted offshoots. Dates are so far subject to pests, only as imported on the young plants, and subsequently scattered. This infestation is in the form of scale of two distinct varieties: the Marlatt and Parlatoria. A spray has been found that will kill these scales, thus eliminating all future danger from outside infection and making possible its eradication, as now extant. Spraying and burning with a gasoline torch have proven to be effective means of killing scale on old and established palms.

"The date is not particular as to the soil in which it grows, and will thrive in considerable alkali. Light and heavy soil alike seem to produce dates. While the date is a desert palm and requires a long period of intense heat for proper development and ripening, the roots require an abundance of water. Dr. Colt says that one miner's inch of continual flow is sufficient to maintain a five-acre orchard of bearing dates.

"The offshoots are set 25 feet by 30 feet apart, or about 60 trees to the acre, and begin to bear at the ages of from three to five years. Seedlings are somewhat uncertain, but offshoots always come true to the parent. A conservative estimate of the bearing capacity of a ten-year old tree would be 100 pounds. Some will bear as high as 400 pounds to the tree. A leading Los Angeles grocer has placed the average retail price for fresh California dates at from 50 cents to 75 cents a pound. They bring from 15 cents to $1 a pound to the grower. Fruit matures, here, from September through December, some varieties ripening on the trees, others requiring artificial heat. The Deglet Noor is very popular, among growers at present, as it will ripen on the tree before the cold weather comes, and is of unusual delicacy of flavor.

"A palm reaches its maturity of bearing capacity at ten years and will continue to produce for one hundred years. One palm sometimes bears as high as 20 bunches of fruit in a season. Offshoots are produced between the ages of three and fifteen years, after which no more appear. During this period, one palm will produce 10 or 12 offshoots, sometimes more. The importers' price for offshoots is $8 apiece. Those grown locally cannot be had for that.

"At Indio is located one of the government experimental stations, where date culture is being forwarded. On an adjacent ranch are four Deglet Noor trees that produced 300 pounds last year that sold for $1 on the average. Twelve imported trees, on the same ranch, will produce at the age of seven years, about 750 pounds of fruit, as they are now laden with 75 bunches of dates. An offer of $25 apiece for offshoots from these Deglet Noor trees was refused, as the owner wished to set more plants and considered them worth that much himself.

"At Mecca is the largest government date garden in the valley. These trees are growing on soil containing three-tenths of one per cent alkali, and have been fertilized regularly each year with one yard of manure to the tree; and have received frequent and abundant irrigation, with prompt cultivation after each watering. The trees have been sprayed for scale. All of the old palms are heavily laden with fruit, and in splendid condition.

"Situated a few miles southwest of Mecca is an orchard containing 5000 date palms. Of these, between 300 and 400 are of bearing age, running from three to five years. The crop on them is estimated at 2000 pounds, and should average 75 cents a pound. From one Deglet Noor tree the owner took 90 pounds of fruit when it was three years old. When four years old no fruit was produced. This season, at the age of five, the crop is estimated at 250 pounds, of which 150 pounds are engaged at $1.50 per pound. In addition the palm has already produced three offshoots. This grower expects to net from $300 to $600 an acre from his dates when they have become ten years old.

"The Imperial Valley is sprinkled with date plantings, and has several experimental farms where dates are grown. The trees thrive and fruit here very readily and are well adapted to such climatic conditions.

"One of the Arizona experemental farms is situated at Yuma where seven-year-old trees may be seen in full bearing. These trees have never been fertilized. Cultivated crops have been grown between the rows, through which the dates have received their only tillage. In the spring of 1912 the palms were pruned severely and burned with a gasoline torch to kill the scale. After this harsh treatment one seven-year-old palm that already contained eight offshoots produced ten bunches of fruit. Some palms did not bear at all.

"Fruiting palms of thrift are also to be found on the mesa near Yuma. These have had little care but the water necessary to keep them growing. One nine-year-old palm produced, in 1911, 210 pounds of fruit that sold for 10 cents a pound, f. o. b. Yuma."

Palm trees bloom early in the spring. The trees vary according to their size and age in the production of flower-clusters, but each tree produces from seven to fifteen clusters. The female plant produces a bunch of fruit for each flower-cluster. The bunches consist of long, slender twigs which are dotted with fruits. From 10 to 40 pounds of fruit may be taken as the basis of the amount in a bunch. A tree is seldom permitted to produce more than ten bunches.

Pollination of the female blossoms is done by hand, by shaking a sprig of male blossom over the female flower-cluster. After this has been done the sprig is tied in place over the female blossom and left there, the pollen falling naturally from the male blossom for days. This operation is one which must not be neglected. It requires no particular skill, but is essential to the production of fruit.

Water should be withheld for several weeks following the pollination process. The fruit will set better if

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not irrigated during that time. After the fruit is set the garden will require no further attention for a few months. August and September will find the fruit ripening, with the harvest extending into October, some of the best varieties, including the Deglet Noor, being among the October ripeners.

Artificial ripening makes it possible to harvest fruit cheaply by the bunch before insects get in their work or the fruit begins to drop off; the fruit is placed upon the market in a cleaner condition; there is less danger from early rains, as the fruit may be picked in time to avoid the harm which might be sustained thereby, and dates may be picked while hard and shipped, then ripened artificially, and are excellent in quality when thus treated.

At the present time the date industry is in the midst of a sound and rapid growth, and, in the judgment of those who are in a position to know what they are talking about, the person who gets into it now and works along scientific and careful lines is certain to realize about $500 an acre on the annual crop. Dates are due to extract millions of dollars each year, for an indefinite length of time, from the Colorado Desert.

CAPTURING LADYBUGS IN CALIFORNIA.

The capturing of ladybugs to kill aphis is a very interesting industry in this state. During the early winter months the miners are always on the lookout for the ladybugs, and they in turn notify the state entomologist and he has them gathered and sent to the state insectary.

A 114-pound lot was received at the insectary last Christmas.

The ladybugs sent in came from Humboldt canyon, up in the Sierra Nevada mountains. They were gathered by the field agent for the state horticultural office.

The bugs were gathered up while they were off guard and thrown into gunny-sacks. Then they were transported by pack train over the snow to the station, from which place they were forwarded by train.

Humboldt canyon is a favorite place for the ladybugs. When the canyon fills up with snow in the winter and there is no more food they foregather in the higher places where there are great bunches of moss. The wormth of their bodies is conserved in this way. The little fellows on the outside worm their way inward and when they get warm crawl out again for a breath of fresh air.

In this way they spend the winter season. Like others of their kind the lady bugs sleep through the winter. Then the warmth of spring helps them to shake off the spell and they are ready for work.

In the insectary an artificial winter is made with ice and by turning on the cold it suspends animation in her ladyship.

She will live for months without food; some having been kept in cold storage for six months without food.

The lady bugs are collected in advance of the melon and cabbage season. The insectary will supply thousands upon thousands of orders from southern California, where they grow melons and cabbage.

As no spray will reach the aphis, the lice which prey on those vines, lady bugs are the only cure.

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CITRUS FRUITS

PROTECTING ORANGES FROM FROST.

By Henry L. Marshall.

WHAT would you think, if in the course of a ride over the Santa Fe in southern California this winter, you should look out, and see a wall of fire, a curtain of blaze, stretching from Redlands down through Los Angeles county to the termination of the citrus belt?

It would be spectacular, and would undoubtedly amuse the tourists not a little. It would furnish a flaming chaplet for the Sierra Madre foothills. What for?

Well, there is an orange grower in southern California, who is a director in one of the big orange-packing associations at Irwindale, and himself an owner of large acreage in oranges, who thinks that it might be quite feasible to warm up the whole orange belt in times of low temperature, by stretching a continuous pipe-line of ignited oil, along the foothills. This, instead of using fire-pots on the ranches.

The originator of this fascinating scheme is J. H. Simpson, and he is attempting to get the ranchers to look upon the idea as practical. A blaze of fire coming from a continuous line of jetting oil, to make a wall of hot air that rises and shuts off the downrush of cold air from the mountains, is a unique scheme, certainly, and some of the ranchers have indulged in quiet smiles.

It would be foolish, however, to ignore any proposition without looking into it. Water is conserved in the mountains by planting trees, thus to keep the sides of the mountains from becoming bare, so that the water will rush suddenly from the slopes and be carried to sea. We do not try to conserve the storm-water after it has reached the valley, at least, not in many cases. In a similar way, Simpson believes in breaking up the cold air currents before they reach the valley. His plan of a continuous pipeline, with stations for replenishing oil, is something which he thinks is perhaps too large a scheme for the rancher to experiment with, and he offers the idea to the government, with the hope that the federal experts may see fit to experiment. In the meantime, the scheme serves to supply a new phase to this question of orchard heating.

How About Smudging?

We are confronted with some grave questions concerning this matter of heating orchards with crude oil. In communities where they smudged heavily last year, the towns were put to horrible inconveniences, and a good deal of damage was done by the oily soot that settled upon and permeated everything. People who could do so, shut up their houses as tight as possible, and went away, out of the citrus district, until the smudging season was over. Storekeepers lost heavily in some instances, because of ruined goods. The interior of houses was found to be festooned with greasy and cobwebby oil-soot, ruining utterly many a fine portierre and lace curtain.

But, says the rancher—you wouldn't have any town at all if it wasn't for the citrus industry, and when you don't smudge during the prevalence of certain temperatures, you don't get a crop, and the city doesn't get any business. The rancher argues that, in saving himself, he is saving the city, and that the city would disappear if the orange crops didn't materialize from year to year. As long as we have progressed no farther than crude oil pots as a method of frost protection, it looks as if the rancher must be protected first. However, some communities of ranchers have already been sued for damages, and one city, the city of Pomona, has spent an entire summer, threshing out the question pro and con. The city naturally takes the stand that it would be better not to have a home in the citrus districts, nor any community of homes, if something is going to make it impossible to live in the community in the most beautiful part of the year, and also at the height of the tourist season.

Meanwhile, very little progress has been made with fire-pots. About all I can see that they have improved upon, has been the name. The makers no longer call them smudge-pots, for the word "smudge" has fallen very drastically into disrepute. They call them fire-pots. But, in changing the name, they did not eliminate the smudge.

O, of course, there has been an improvement over last year. Out of the hundred or so, different kinds of pots, there are a few that give more heat and less smudge than the ones of former years. But I have attended several special, smudgeless demonstrations, and have had no trouble in finding the place of demonstration, as there was invariably a black pall of smoke for a half-mile square around the demonstration.

In desperation, ranchers are using fire-pots, because there is nothing else. We have well-authenticated cases to quote, where ranchers who used fire-pots last year, saved a big portion, or all, of the crop, while neighbors did not realize a cent, because they didn't use fire-pots. You can't blame any rancher for using the best thing at hand.

But this doesn't change the fact that the best fire-pot so far invented, is inadequate to a large degree to successfully raise the temperature after it has gone below 28 degrees; that it smudges the foliage of the tree so badly that many question whether it does not do material harm; that it is almost an herculean task to keep one fire-pot to a tree going in a grove all through the night, and therefore expensive in labor; that ranchers almost have to shanghai men to work at the dirty, suffocating job; that many men fall very ill from alternate cold and hot air and from breathing so much carbon; that the best fire-pot does not consume all the oil, leaving a residue that must be cleaned from each pot ,a tedious job during the day; and lastly, that fire-pots, made of sheet-iron are short-lived, burning out quickly, say, in three years, necessitating a complete and new outfit, which, taken all around, makes a stiff cost that very materially effects the profits.

Then again, in southern California there are thousands of acres that will not be supplied with smudge-pots this year, because the rancher hasn't the cash to buy them. So far, no concern making fire-pots has come forward and offered to carry the rancher for the pots until he can sell his crop. Either the fire-pot companies have not been capitalized high enough, or they are dubious of the rancher being able to save his crop and pay for the pots. One fire-pot concern wanted the local banks in one community to advance money to the ranchers for the purpose of buying fire-pots. The banks, of course, refused to do this. It's up to the manufacturing company to carry the risk.

Hoping for Good Weather.

Some ranchers say that when it gets to a point where they must heat all out-of-doors in order to grow oranges, they will go out of the business. Others are putting in expensive outfits, and installing huge oil-tanks. One man who irrigates with an overhead system, says that he can combat frost with water, unless the weather falls below 26. Several packing associations have contracted to furnish the ranchers with fire-pots, on the same basis as they now furnish fertilizer, vetch, and other ranch necessities.

And, it may be, that we won't get a single night this coming year, when the weather gets down "right smart." If it doesn't freeze this year, there will be one of the finest crops marketed that ever went out of the state, for the fruit is smooth of skin, and of good size. If you want to see a sight that will make your heart warm, just walk through a finely-fed and finely kept Washington navel orchard right now. It's a beautiful sight.

THE GREEK CURRANT.

THE Greek or Zante currant has been produced on a very large scale for centuries. They are the seedless variety of a peculiar dwarf grape vine producing a small black grape, or currant, of a peculiar flavor; it is the most important crop in Greece, as it forms nearly one half of the total exports. The vineyards cover 150,000 acres, and produce the enormous total of from 300,000,000 pounds to 370,000,000 pounds in a favorable season, or far more than double the size of an average California raisin crop. Owing to low prices, which did not cover the cost of production, "The Privileged Company for the Protection of Currant Growers and Traders" was established by rayol decree in 1905, with a capital of $4,000,000. The company guarantees three fixed prices according to the grades, and buys at these figures at the end of the season (June 15th to July 31st) any currants not absorbed by the regular trade. During the season of 1912 no dried currants were offered to the Privileged Company, as the market prices have been higher than the convention limits. The crop of 1912 is estimated at 157,500 tons, and the quantity available for export on December 31st was estimated at 35,000 tons against 30,000 tons in 1911. Besides the Privileged Company there is a Greek wine and spirit company, "The Societe Hellenique de Vinis et Spiritueux," which buys a large quantity of the fruit for wine making. The purchase last year by the company and local distilleries was 46,500 tons of fresh and dried currants, against 47,000 and 38,000 during the two preceding years.

In an endeavor to put a check on overproduction, the Greek Government in 1911 made a loan of $3,860,000 to the Privileged Company to reimburse growers for uprooting their vines, as it is intended to destroy enough vines to reduce the crop 25 per cent. Owing to better prices, the progress of uprooting the vines during the past year has not been very raepid, amounting to only about 1900 acres, the total compensation paid to the growers being about $150,000, equal to an average of a little less than $80 an acre. It is hoped that a much larger area will be pulled up during the coming year, the Privileged Company having made more advantageous offers to the growers.

CITRUS BY-PRODUCTS.

From California Citrus Culture—By A. J. Cook, State Commissioner of Horticulture.

IN Sicily the inferior and injured lemons, and to a less degree the oranges, are used for by-products. In case there is a great demand for fruit, the best of this inferior fruit is often diverted to the markets.

Citrate of Lime.

Citrate of lime is one of the most important of these by-products. The concentrated lemon juice is pressed from the lemon, warmed, filtered, then heated nearly to the boiling point, when finely powdered chalk is gradually added, being constantly stirred, and when effervescence has ceased we have citrate of lime as the result. By adding dilute sulphuric acid to this salt a chemical change produces gypsum (sulphate of lime) and citric acid. The process of this manufacture is simple and the necessary equipment limited and cheap. There is no reason why the growers might not produce this product, except that possibly it would not pay.

Concentrated Lime Juice.

Lemon juice as it is pressed from the fruit is a valuable article of commerce. By boiling carefully it is concentrated and is then ready to ship. Only inferior fruit is used for this purpose, especially that which is punctured or bruised. Orange juice or orangeade is also a valuable product.

Oil of Lemons.

This essence consists of spirits of wine to which oil from the oil cells of the lemon peel is added. The fresh peel is soaked, then pressed against a sponge, which absorbs the oil. Only inferior fruit is used, though it must be fresh and sound.

Salted Lemons.

Inferior but sound fruit is often shipped as a salted product. The lemons are halved and placed in a salt brine for ten days and then shipped in casks, usually to Leghorn, Tuscany. This salted material is freshened by being placed in water; then it is ready to use for candied peel.

Candied Lemon Peel.

Leghorn, Tuscany, is the great manufacturing center for candied lemon and citron peel. This is an important product, shipped to many parts of the world. The rind is freed from the pulp, freshened in water, then placed in a weak solution of sugar, which is gradually made stronger, and after several days it becomes saturated with the sugar. A slight fermentation is said to improve the product. At last it is boiled in a concentrated solution of sugar, after which it is dried and coated with crystals of sugar by slow boiling in a very strong solution.

In Italy, where labor is cheap, and where everything must be utilized, the citrus by-products are of much importance. It is necessary there that nothing be lost. One-third of the Italian lemons are converted into by-products. These industries have further service, as the culls are disposed of and injury of the market is not caused by their sale. At present these by-products are of small importance in America, but we may hope that the inventive genius of our people may bring about a change in the not distant future. The United States department of agriculture is now experimenting regarding the practicability of our using our culls profitably in the production of citrus by-products. We all hope that success will crown their efforts.

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DAIRY

A CLEAN MILK SUPPLY.

By Samuel E. Watson.

THE University of Wisconsin has devised a practical method of testing milk for cleanillness and has also issued a bulletin to explain its workings. The apparatus is made in several forms, both for laboratory and easy use by inspectors and others handling milk.

The California State Dairy bureau, through some of its inspectors, has adopted this test and I have been using it constantly through October and November and depend on it to secure clean milk in Alameda, Contra Costa, Marin, Sonoma and Napa counties, copmrising my territory.

Taking a common-sense view of this milk question I believe that with this easy way of finding sediment that the bacterial count is entrely useless and that by going right to the dairy and showing milkers that they are not careful, and that arrests will follow neglect in regard to cleanliness, that nearly every drop of milk peddled will be kept clean.

This Wisconsin bulletin says that "there has always been a demand for clean milk and the customer in recent years has shown a willingness to pay fancy prices for it. Ten cents a quart is not an unusual price and clean milk is worth it. The amount of sediment in milk is one indication of its sanitary condition, for dirt in milk is not only unsightly and unpalatable, but may be very dangerous because of the large numbers and varieties of bacteria introduced with it. Every bit of dust, every particle of manure and every hair from the udder and flank of the cow will introduce undesirable bacteria into the milk during the milking process. Dirty milk always has a high bacterial content; and these bacteria may be of such a nature that they will produce most undesirable flavors in the milk, butter and cheese and may even be the cause of disease, especially intestinal diseases in children.

During two months' use of this simple test I have but one sample of extermely clean milk and warnings have been given generally that hereafter complaints will be made and arrests follow wherever conditions are not improved. There is almost no extra expense involved in following cleanly methods and no hardship is required of dairymen to observe them. In the milk supply business, especially, uncleanliness should not be tolerated and one who is naturally and hopelessly filthy ought to be forced out of the milk business, to give better men a chance, therefore our state dairy laws should be rigidly enforced, with that end in view.

The Wisconsin sediment test is really a wonderful little apparatus in results though extremely simple and inexpensive. For less than $5.00 any one can secure the outfit and enough cotton discs to make 750 tests. The form I am using consists of a nickle holder for the cotton disc under the size of a half dollar. Milk is forced through these (when placed between pint bottles) by the compressed air forced through the milk in the upper bottle. A rubber bulb drives the air and each pressure on this bulb forces a stream of milk downward until the upper bottle is emptied, when disc is taken out and condition shown to the milkman.

SOME RESULTS—In actual use of the device, in addition to showing milk distributors and producers the comparative cleanliness of their product by keeping all the discs for that purpose, I have detected several wrong conditions, one of them very serious. In this instance the milk was found very dirty and on going to the dairy ranch the reason was easily found. It was run through a brass strainer only, out in the corral, with winds blowing fine manure into the cans, which were set on the delivery wagon.

Here was gross carelessness, for there was a good milkhouse, nearby. Coming back to this place a few days after, to see that orders were followed and in enforcing other requirements it developed that anthrax was epidemic in the herd. Without the preceding test probably this fact would not have been developed.

Another sample of milk would not go through the cotton and going to the place where it was milked a case of garget was found in a fresh cow, with a caked quarter of the udder, from which the yellow substance had come to clog the cotton.

Several samples in which slight acidity and thickening had prevented the milk from being forced through, were found and in one instance a lot of milk was found to have been pasteuribzed at 180 degrees, cooking the albumen, so that it was deposited on the cotton.

Other abnormal conditions were noted that if followed up by one who could find the exact cause would, perhaps, have led to important scientific conclusions. One of the most common of these unusual appearances was that of fine granular white specks in sweet milk, that must have been due to condition of the animal.

Nearly always the cleanest and sweetest milk was forced through the cotton easily, while dirty or other milk that was not just right in appearance went through slowly and sometimes could not e forced through. Therefore this tester is nearly infallible in finding clean and normal milk as distinguished from the reverse.

In the instance where a bottle of clean milk was taken from a wagon in Santa Rosa, the only one that left the cotton disc as white as before use, the milk had been carefully handled as follows: First, the udder was brushed by the hand to free it from loose material. Teats were washed from a clean pail of water and then dried with a clean cloth, carried by the milker in a side pocket. At once the cow was milked into a pail with top that had small opening and strainer, in which most of the extraneous matter would be held. This is the "Sanitary" pail, which is shown herewith.

Each pail of milk was carried to a perfectly built milkhouse, with sanitary surroundings, and run over a tubular cooler, absolutely clean and sterilized. Over the upper tank in which the pail of milk was emptied from inside of house and also over the milk tank under the cooler, from which the milk was to be bottled, a cloth was stretched. As the milk fell below there was absolutely no evidence of sediment.

It is a very common thing that dairymen say that only brass strainers are used by them and always their milk has sediment in it. These brass strainers catch the coarser particles, but permit fine sediment to get through so that cloth strainers are necessary. Ordinary cheese cloth is often used and this is little better than brass, though several folds serve fairly well. It has been found that butter cloth, sugar sacks or the finer grade of cheese cloth doubled will do the best straining, if the force of milk is not concentrated on a small surface. These cloths stretched over a tank or strainer give best results.

At best, however, straining is only a partial means of keeping milk in condiion to prevent souring. As the Wisconsin bulletin states, many germs are introduced while the milk is going into the pail, from hairs and loose particles on the cow or in the air. The best straining will not take out the fine sediment dissolved in the warm milk, which takes this germ life with it. Bacilli that causes souring of milk will increase double, perhaps, while the pail is being filled and taken to the strainer. If a million fall into the pail, there will be two million in twenty minutes, while the milk is warm.

Two million of the lactic acid bacilli to a teaspoonful of milk is regarded as very good in the San Francisco milk trade, while normally in fresh, clean milk there are about 6,000 as Dr. Temple, of Santa Rosa, states, therefore by care and quick cooling there should be nearer 10,000 than 2,000,000 in the best milk served to families outside of the larger cities, if rapid service is possible.

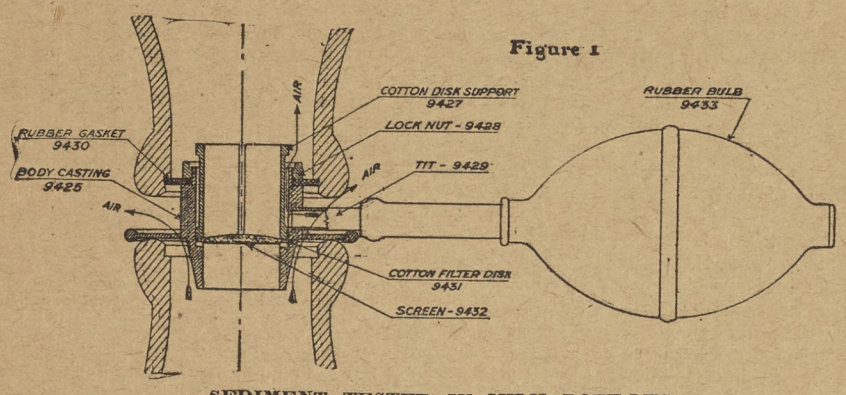


Figure 1

SEDIMENT TESTER IN MILK BOTT LES

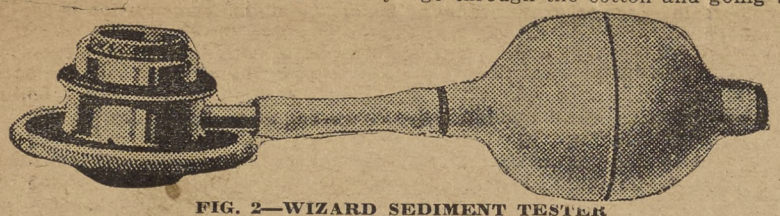
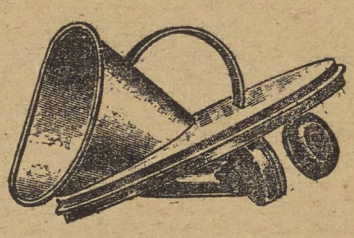


FIG. 2—WIZARD SEDIMENT TESTER



SANITARY PAIL TOP

SANITARY MILK PAIL

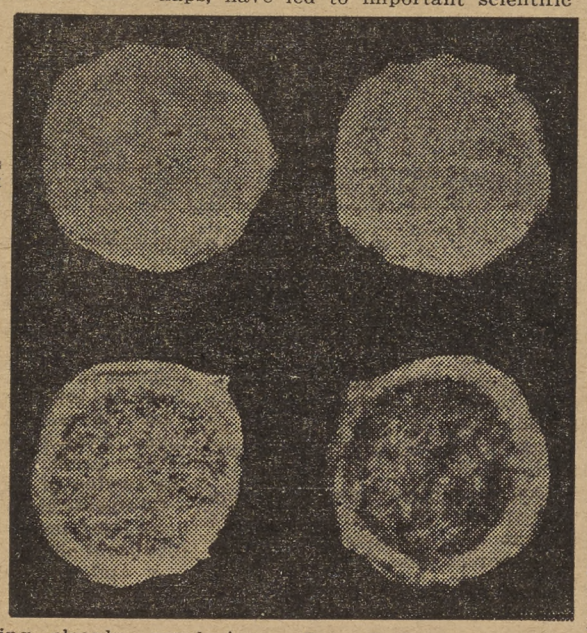


Figure 3.

Four grades of milk as indicated by the milk sediment test. One pint of milk was poured through each of these discs of absorbent cotton which were perfectly white at first. They show four grades of milk, as follows: Upper left, **perfectly clean;** upper right, **slightly dirty;** lower left, **dirty;** lower right, **very dirty.** The records obtained by this test will aid in grading milk as to its cleanliness and furnish a basis of paying for it according to certain standards that may be agreed upon.

Gladstone, when a boy, was visiting in the country, and the farmer was showing him around. Coming to a field that contained a large black bull, the farmer said: "There's a fine, strong bull there, Master William, and it's only two years old."

"How do you tell its age?" queried the boy.

"Why, by its horns," said the farmer.

"By its horns?" Young Gladstone looked thoughtful for a moment, then his face cleared. "Ah, I see. Two horns—two years." — Boston Transcript.

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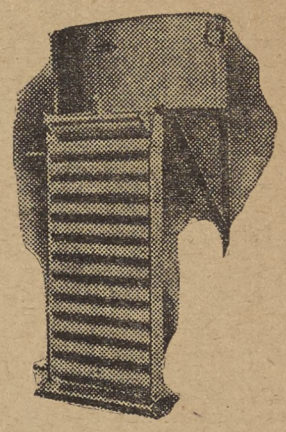
DAIRY.

Proper Feeding of Cows.—"It sometimes happens that farmers are in possession of extra good cows, but not realizing the amount of feed required by cows giving a large yield, they are soon allowed to shrink in milk because the feed given does not provide sufficient nutriment. While cows in good condition can, for a time, give more milk than the feed provides, by drawing upon the fat stored in the body, yet if the grain is not gradually increased as the cows lose in body weight, there will soon follow an abnormal shrinkage in milk flow, and also a decrease in the quality of milk yielded."—Bulletin 130, University of Minnesota.



TUBULAR COOLER

The wise dairyman will keep his best cows, and not let the buyer tempt him even with a good price. The better the cows the better the profits.

The dairyman who sells cream only should keep a good number of pigs to consume the skimmed milk. They will mean a handsome profit at the end of the year.

The dairy should be flooded with sunshine and fresh air. Both are safe-guards against poor products and diseases. Such a place is much more easily kept clean.

A saving of about ten per cent may be made by grinding the grain for farm work horses when at hard labor.

CALIFORNIA'S SUGAR HARVEST.

By P. L. Edwards.

THE harvesting of beets and the production of sugar from the rich juices of the beets grown in California is over for this season. The loud siren whistles on the many big factories no longer awaken the far-distant echoes of the broad valleys, whose rich soils have produced such remarkable results.

The campaign just closed is the greatest in results in the history of the industry of this state. From an acreage of above 137,000 there has been produced about 1,200,000 tons of beets. A remarkable production when it is considered that quite a large acreage

HARVESTING SUGAR BEETS NEAR SANTA ANA

of the total amount is experimental. That is, lands being tried for results and some lands not deemed suitable for other agricultural purposes. From this tonnage there has been produced, as near as the same can be ascertained, 168,500 tons of marketable sugar. This means to the housekeeper in the habit of giving small orders to her groceryman, 337,000,000 pounds of the whitest sugar imaginable. That is a pile of sugar beyond the comprehension of ordinary men and women. It is surely some sugar for a single state to produce in a single season. As in some other things, California leads all other parts of the United States in the producton of beet-sugar while both Michigan and Colorado have more factories in operation and the latter has a much larger acreage planted to beets, in neither of these states is the sugar content so high. It is claimed for Colorado, because of the larger number of factories operating and the larger acreage seeded that that state will produce more sugar this year than California. With fourteen factories in operation and a seeded acreage of about 170,000 such may be the fact. But the ideal conditions prevailing in the coast country and the valleys of the Sacramento and San Joaquin rivers are not duplicated anywhere else in this broad land of ours for the production of beet-sugar.

With but eleven beet-sugar plants, one of which, that at Visalia, is comparatively small, in operation, the results obtained this year place California at the front as a sugar-producing state. In this respect it is interesting and instructive to consider the remarkable growth of the industry in one section of the state. Orange county, one of the smallest political divisions of the state, has within its limits four plants and two others on its borders. Six factories draw their support from the soil of this one section and one other factory, that at Oxnard, draws a part of its supply from this same section. The huge smoke stacks of four of the plants are within sight of each other. Certainly a remarkable tribute to the influence of sunshine and soil. And the deep-mouthed whistles at these plants summon a small army of workers each day of the campaign to reduce to valuable products in the markets 500,000 tons of sugar-beets grown on lands which, at one time not so long ago, were waste or lands of little marketable value.

What the industry means to this section it may mean to other parts of this great state. If the product of the acreage of Orange county is as stated, 500,000 tons, and it is certainly not less, the average price paid by the factories being about $5.75 per ton, this would put into the hands of the people of that particular section $2,875,000, the value of the beets alone. Anyone at all familiar with conditions in the neighborhood of any beet-sugar plant will know that there is a large amount of money in addition circulated in the vicinity through wages paid to the operatives of the factory and unskilled labor. It is a small plant that has not a payroll amounting to $15,000 to $20,000 each month while operated.

Comparing results obtained this year, as near as may be at this time, on account of the campaign in both Michigan and Colorado being in progress, it is readily seen why California is the favored section. While the average yield per acre is slightly under ten tons—the estimated average of the Colorado fields the average sugar percentage on which is based the price paid the grower, is 14 per cent, whereas Colorado can claim but 12 per cent. California exceeds Michigan in both average tonnage and sugar per cent. The average per cent of sugar in the beet in Michigan is nearly 11.25 per cent.

While the average sugar per cent in this state is but 14, there are many instances of sections showing a much higher average. This is particularly so in the inland sections where irrigation is resorted to to overcome drouth conditions. Experiments show beyond a doubt that when a system of artificial irrigation is devised to overcome natural conditions in the San Joaquin and Sacramento valleys, such lands will yield a product marvelous in sweetness and volume. At one of the factories in Orange county the past year the growers received pay for beets that averaged 18 and 19 per cent sugar. There are ideal sections of this state for such agricultural operations and they have not yet been developed. What the future has in store for the industry may be problematic at this time. It is safe to assume, however, that an industry whose possibilities are almost without limit, is not going to languish for any length of time because of the timidity of its promoters and supporters.

Another asset of the sugar-beet factories of this coast which is of very recent adoption, is the installing of dry kilns at the several plants designed to produce a very valuable stock food from the waste beet pulp. A few years ago it became a serious problem to the management of the sugar companies what to do with this rapidly accumulating mass of rejected substance which in its undried condition lay in the open field, or silo, soon fermenting and diffusing offensive odors. The public health officials demanded its abatement. What to do with it was an embarrassment to the management of large proportions. They could not give it away. They were enjoined from running it into the streams. So important became the matter that a commission of representatives of sugar interests went to Germany and France to study conditions. They came home with several ideas and one of these ideas was that beet pulp properly prepared was a valuable stock food in the markets where known. American ingenuity did the rest.

So that now this waste portion of the beet is prepared in the dry kilns of the several plants where, with a solution of the crude molasses it is thoroughly dried, in manner as bread is baked, and is put on the market at a cent and a quarter a pound on this coast.

A chemical analysis shows that about 10 per cent of the beet is pulp as it is rejected in the process of sugar-making. Of this 10 per cent about one-half, or 5 per cent, will be saved in the process of drying and preparing for the market. This means that from every ton of beef sliced 100 pounds of dried pulp is saved worth $1 to $1.25 retail. From this simple statement it may easily be seen that the factory slicing 60,000 tons during the operating season will save $60,000 at least. Enough to nearly cover operating expenses of the factory for the campaign. And this result has come from the solution of the problem of what to do with waste product.

In conclusion it may be said that nearly all the factories of this state now have the dryer in connection with the sugar-making process.

A BIG CALIFORNIA BEET FIELD

FARM

P. OF H.

MASTERS ADDRESS BEFORE NATIONAL GRANGE.

MANCHESTER, N. Y. Nov., 12. 1913.—National Master Wilson presented his annual address, which was in part as follows:

New Hampshire is practically fitted for entertaining the National Grange as it is the center of grange activity, there being no state in the union whose territory is so thoroughly organized. This being the case representatives from other states should study conditions here and find by what magic power the grange has been so thoroughly and firmly implanted in the "Granite State."

One of the objects of the grange as formulated by the founders was to make the farmer of the future a self-reliant citizen, to build a man rather than to gain a dollar was their ideal. Both their hope and ideal have by patience and study born fruit—the fruit of achievement, which is our heritage.

Co-Operation.

From the earliest history of the grange co-operation has been advocated. In fact the entire structure of the order rests upon this one principle. Our members generally have learned its value and it is usually practiced in every phase except in selling. There has been much financial co-operation practiced in the purchasing of supplies but little has been done in the disposing of products. There is more benefit to be derived today from co-operation in disposing of the products of the farm than in the buying of supplies.

Co-operation to be successful must be carried on by those directly interested and should be started in a small way and allowed to develop. The producers and consumers are the two classes that must come together and manage the business if it proves successful. The farmer has been waiting too long for some capitalist to come forward and solve the problem for him.

While the grange desires to bring about a system of financial co-operation for the benefit of the producer, it does not believe in placing a heavier burden upon the consumer, therefore, it should be fairly understood that the grange is opposed to any system looking toward limiting production or arbi-

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Do you know that a big crop draws out of the soil practically all of the available plant food and that it takes two years or more of weathering action to put the soil into a condition so that plants can get the necessary food from it? Do you know that there are ways to get a big crop every year?

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trarily fixing prices. This system is as unjust as it is impractical and should not be considered by a true patron.

No more important question will come before this meeting than the report of the committee on co-operation, which report should be carefully considered and such action taken as will place before the public, in practical and tangible form, a joint and equitable plan of co-operation.

I merely desire to call attention to the fact that after a quarter of a century of agitation and education another victory has been secured for the grange—United States senators are now directly amenable to the people.

It must be remembered that the grange was in the fore front of this battle and practically stood alone for years during the time when this measure was most unpopular.

Postal Improvement.

Another grange victory was secured by the enactment of the parcel post law which for more than 20 years was advocated by the grange. Since establishing the parcel post system the postmaster general has added to its efficiency by increasing the parcel weight limit and decreasing the rate. No sooner was this order issued than certain interests made the claim that the postmaster general was exceeding his authority and that changes of this character were not administrative measures but must be regulated by congressional enactments.

The grange must be active in defeating any bill tending to curtail the authority of the postmaster general in this regard.

Peace.

This great and important question has been agitated in almost every civilized country upon the globe, with apparently a strong desire to bring about something of a higher character than we have previously had, an ambition to do away with the Mosaic law idea of "an eye for an eye and a tooth for a tooth." The principles of peace should begin in the center of our being and we should endeavor to plant in every heart the spirit of kindliness and good-will toward our fellow-men and to inculcate the principle that right not might should rule the world.

The grange is to be congratulated on the firm stand it has taken in favor of a world peace. It is hoped that in the near future the cabinet position now known as the secretary of war will be discontinued and in its stead we will have a secretary of peace.

National Legislative Policies.

The grange has ever been ready to champion the cause of justice and right. It has never been influenced by political party policy on questions at issue, but has endeavored at all times to assist in the enactment of good laws. It has also been active in defeating vicious measures or those which would work a hardship on the mass of the people. Some of the important measures the grange favors are:

Federal aid for road improvement.

Conservation of our natural resources.

A just and equitable system of financial co-operation.

Effective regulation and control of railroad and express companies

A rational and fair system of agricultural credit.

International peace.

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Schubert	$ 80	Stroud Pianola Piano	$465	Blasius & Sons	$195
Royal	$190	Autopiano	$275	McCammon	$125
Kohler & Campbell	$190	Andrew Kohler Player-Piano	$415	Wheelock	$220
Hoffman (oak)	$175	Technola Player Piano	$375	Haden	$115
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I have a..... .....piano to exchange

E-14

CHILDREN'S DEPARTMENT

Edited by KATHERINE DUNLAP CATHER.

FRENCH CHILDREN AT PLAY.

DOROTHY had played so hard that afternoon that even her little blue eyes showed how tired she was. And her yellow curls were all tangled and matted from being tossed about by the autumn wind. Her frock, clean that morning, was all rumpled and stained.

"Goodness me, Dorothy," said Mamma as she undressed her for bed, "you are becoming a regular Tomboy! Why can't you play without romping and getting yourself all mussed up? Why don't you — oh, why don't you play the way little French children do! Come now, get into bed and let me tuck the covers around you and I'll tell you about the little boys and girls in sunny France. There—now we're all ready for our Sleepy-time story, aren't we?

"The French child, Dorothy, is always polite. On bright, sunny afternoons their nurses or their Mammas take them to play in the broad Champs Elysees where they roll their hoops or spin their tops very happily, but also very politely. If a little French boy or girl sees a strange child and wishes to play with him he steps up to him and in his very politest tone asks him to play.

"And what do you think is the favorite amusement of the French child? You could never in the world guess it, Dorothy, I am sure. It is a Punch and Judy show! It has been a long, long while since you have seen one, hasn't it? You remember how cross, wicked old Punch beats his poor wife, throws his baby out of doors, kills the policeman who comes to arrest him, and happily, is at last hung?

"Well the little French children scream with delight and applaud every time they see Monsieur Polichinel—as they call him—getting punished for his misdeeds. And they see the performance over and over again for there are many little open-air Punch and Judy shows in all the parks, each with rows of seats for the little spectators.

"Some of the little girls in France have as handsome if not handsomer dolls than we have in our country. But their parents are wealthy. Most of the girls, however, play with a doll that I'm quite sure you would not like at all. It is made of pasteboard and is very large. It has a head, of course, with hair, eyes, mouth, nose and ears painted on it.

"And a neck?—yes, to be sure, a neck; but from there down there is nothing but the round pasteboard tube to which the head is affixed. No arms, no legs and, in fact, it doesn't look like a body at all! But the French children do not mind for, you see, all they have to do is to put little dresses on it and, lo, nothing but the pretty head then shows!

"You aren't a boy, of course, but if you were you certainly would be displeased with the way little French boys dress. Not little ones, either, for, mind you, up until the time they are fifteen years of age they wear socks and short knee-trousers. When in school they put on long, black aprons.

"But, strangest of all, if a French boy attends private school he is always taken there each morning and escorted back home when school is out by a nurse or his father or mother—even if he is fifteen years old! Now wouldn't the big boys in your school look funny being brought there every morning by a nurse!

"But the French children do not think it strarge. Indeed, if several of them were to play with you here they would no doubt think you had very peculiar ideas of how to have a good time at play."

A folder of receipts in every can.

Ghirardelli's Ground Chocolate

Use it for many purposes.

As a flavoring for puddings, ice cream, candy, cake, iceing and sauces, Ghirardelli's Ground Chocolate is unequaled for its delicate and pleasing flavor. And as a health beverage it is in a class by itself. So simple to prepare, so economical—so many practical ways to serve and use this beverage food product.

D. GHIRARDELLI CO.
San Francisco Since 1852

A sample can mailed free for the asking, will convince you of its quality.

THE BOYS' BONFIRE.

IT IS fun to go hunting in autumn. It is fun to go nutting, too. But for some reason there is one fall pleasure that cannot be equalled by any other—building and burning bonfires. Fall is just he time for it; the chill in the night air makes the warm fire feel good; the brightly colored flames that only autumn leaves can make and the towering clouds of smoke are beautiful to look upon; but above all is the pleasure of watching things burn—a pleasure that is born in every boy.

So thought Ned and Ted and Red. Odd they should have names that rhyme, isn't it? Well, it was only an accident, a pure matter of chance that morning to build the bonfire. Not much wind was blowing, so they had no trouble in the way of scattering leaves. Enthusiastic as they were, they found it a bigger job than they had expected, but they stuck to it, each conscientious enough to rake the yard clean while they were about it. Red finished his yard first and then helped carry leaves from the other two yards. Having had a rest and a bite of dinner at noon, they resumed work and by 3 o'clock their task was finished. The bonfire was made. And such a pile it was? When heaped up, it was bigger than any haystack they had ever seen.

"It is so large," said Ned, "I am almost afraid to set fire to it."

"It will make a whopper of a fire, all right," agreed Ted, "but there are no trees near and very few wagons or buggies pass along this street."

It may be remarked that it was a small town and the streets were not paved; in fact, it was hard to keep the grass ffom growing in most of them. Since there was little traffic, it was the custom o burn leaves in front of the houses.

The boys were leaning against the huge stack of leaves, resting, when they saw old Mrs. Williams hobbling past on her way down town to do some shopping. She stopped and gazed at the pile.

"That's a turrible big pile o' leaves, children," she remarked.

"Yes, ma'am," replied Ned.

"What be you going to do with them?"

"Have a bonfire tonight."

"Lawsy me! It's a shame to burn all them leaves. Wisht I had 'em in my woodshed. They'd make mighty good kindlin'. Well, boys, I must be gitting along to town. Hope you have a good bonfire."

When she was out of sight, Ned stood up and faced his companions.

"Why not let her have them?" he said.

The boys looked at each other in disappointment.

"And spoil our bonfire?" said Ted.

"Yes, but they would help to keep her warm this winter."

"This would have made the biggest bonfire ever burned in this town," said Red.

"Yes, but it will make her a hundred fires and save her wood," replied Ted.

As if having arrived at a decision at the same time, the boys arose from the haystack.

"Let's get our baskets," said Ned.

"All right," said Ted.

"I'm in on it" said Red.

It seemed even harder work to tear down the big pile and carry it to Mrs. Williams' woodshed than the building of it. Her cottage was in the next block and to accomplish the transfer it was necessary to make many trips. However, the hardest part seemed to them in spoiling the bonfire they had planned. But as they were fairly started in the work, they came to feel a distinct pleasure in it, conscious of their knowledge that they were doing a good deed.

"It's more blessed to give away a bonfire than to burn it," quoted Red with a grin.

The others laughed at this remark and as the three of them continued the work of packing the leaves into their baskets and carrying them to the shed they were actually having more fun and feeling happier than if they had had a dozen bonfires to burn.

At last the last bit of the bonfire had disappeared and the woodshed was chock full. Then they hid behind the shed, for they had heard Mrs. Williams returning. It was not long before she limped out to the shed to get some kindling with which to build a fire. When the boys saw what a surprise they had given the old woman and noticed the tears come to her eyes, not a one regretted in the least that they had given up their bonfire. All she could say was to murmur over and over, "Lawsy me, lawsy me!"

When she had returned to the house with a basket full of leaves, the boys slipped out from their hiding place and ran home, feeling happier than they had ever felt before.

"I'm glad we did it," said Ned when they had returned to the scene of the bonfire.

"So'm I," said Ted.

"Me, too," said Red.

And Ned and Ted and Red never said a truer thing in their lives.

THE COPO DE ORO CLUB.

Dear Boys and Girls:

We are going to have an honor roll, to be made up of those who have written three times. Whether you have sent a letter for the Letter Box, or just answers to puzzles, your name will be on the honor roll to be published the first week of each month. And when it has been twice on the honor roll there will be another surprise for you. So let me hear from you, for I am sure you want all the boys and girls who read the California Farmer to think of you as one of the bright young people of the state.

So many nice letters are coming in all the while, and you have no idea how glad I am to get them. So keep on writing, and those of you who have not written yet, just remember that there is no time like the present, and make your beginning today.

THE CHILDREN'S EDITOR.
24 W. Santa Clara St., San Jose, Cal.

The Letter Box.

Escondido, Calif.

Dear Editor:

We saw other children's letters in the "children's page and thot we would write and tell you about our pets. We have a dog and 2 kittens, a colt and a cow. We think the country is nicer than the city because you can't have many pets in the city. We go to school. We have not been in California very long but it's nicer in sunny California than in the east, where it is so cold. But we do miss the sleigh rides. Good bye. Your friend,

EARNST SMYTHE.

Watsonville, Cal., Nov. 14, 1913.

Dear Editor:

I read your California Farmer section every week, and read those nice little letters that some of the children wrote, and they are really fine and interesting to read. So I thought I would write one, too, and hope that it will be published, as I am anxious to read it in print.

Perhaps somebody will like to hear about my pet owl. He has very large eyes, and has two feather horns. And I trim them all the time to make them look bright. He is ash gray, and has such large wings. He is twice as big as a chicken. He has very big claws, and I feed him all kinds of raw meat. I caught him about four months ago. Well, I hope this will be published.

I am nine years old. Yours truly,

MARION MINOGGL

EDUCATIONAL

ENDING WAR AND MAKING CITIES BEAUTIFUL.

HOW to save the world the ruinous cost of war and of armed peace, and how to prevent overcrowding in American cities and make them beautiful, convenient, comfortable and fit places for human beings to live and rear families in—these two significant social problems of the day were discussed by two recent European visitors at the University of California. These men from across the Atlantic were B. N. Langdon-Davis of the Garton Foundation of London, brought from Europe as visiting lecturer by the American Association for International Conciliation, and Dr. Werner Hogemann of Berlin, eminent authority in the new science and art of city planning.

That every English house contributes not less than $1 a week in taxes toward military expenses was the declaration of Mr. Langdon-Davies. And 10,000,000 people in England have insufficient food—a fourth of the population. "Armed peace" he declared to be bankrupting the world. He maintained that in these days of international division of labor, of vast international trade, of a delicately adjusted international credit system, that the whole world is vastly harmed by war, non-combatants as well as principals, and the winner of the war no less than the looser. Japan, for instance, was victor in two great recent wars, and today, he asserted, half the earnings of the ordinary Japanese family go for taxes, enormously increased because of interest on war dept and the cost manufacturing armament. His appeal is for general thought and discussion and the formation of local peace societies, in order to build up a public opinion that will support disarmament between nations, international conciliation and the use of war power on some basis of an international police force to lick the bad-small-boy country into good behavior. He believes the great nations have no conceivable sound motive for attacking one another; that no genuine benefits would accrue to the winners in such conflicts, and that growth of understanding among kings, cabinet ministers and the rank and file of mankind of the economic verities regarding armament and war is hastening disarmament and insuring friendly co-operation between nations.

Overcrowded Cities Should Be Avoided.

That the overcrowding in the cities of the Old World is inconceivably horrible and now well-nigh irremediable was declared in an address to the students of the University of California by Dr. Hegemann, who has been living on the campus for some weeks while preparing a report on a city plan for Oakland and Berkeley. He said that in his own city (Berlin) more than 500,000 people live five to a room. Forty years ago Berlin had 750,000 inhabitants, today more than 4,000,000. He predicted that children now playing in the vacant lots of Berkeley and Oakland would in middle age find themselves living in a Greater San Francisco grown up at some such rate.

So Dr. Hegemann urged that the cities and towns of California should prepare for a future larger than even the sanguine are apt to foresee, and now while land is worth a tenth or less what land similarly situated in European cities is valued at, take steps to provide ample room for transportation facilities, for great traffic streets, public harbor developments, adequate sites for schools and other public buildings, park areas and linking parkways, and plenty of public playgrounds, so that no child in the future city need live more than a half mile from an ample playground where health, strength and character may be developed in the indispensable activity of vigorous outdoor play. California, he points out, still has time to plan its cities so that overcrowding shall be forestalled, health and well-being protected and beauty won—and to a city and its inhabitants, he declared, civic beauty is of enormous financial advantage as well as of inestimable value for human happiness and contentment.

IS YOUR DOLLAR ELASTIC?

By Edward Berwick.

DID you try to stretch a dollar? How much stretch was there to it? When you tried it over the bargain counter, did it fly back, by virtue of its elasticity and hit you in the feelings when you found yourself fooled over your fancied bargain?

When you tried to stretch it by loaning it out, to get back 3 per cent more at the end of the year from the U. S. A., did you ever find it came back with only 97 cents because of its decreased purchasing power? What sort of a dollar is "elastic," anyhow?

I went to hear a discussion at a San Francisco club dinner last week. The University of California professor asserted that gold was the only "good money," all else was more or less "bad." Gold was "elastic!" "Elastic in the highest degree!" The Stanford professor thought "gold" was not "elastic" just a little bit. A leading real live banker, a top-notcher from London, avowed that so much erudition put him out of his depth; but applauded the system, in vogue in Britain, of raising the rate of discount when the supply of gold was running low.

Of course the farmer was made a scapegoat. His demand for money for "moving the crops" was dwelt upon as one prime need for an "elastic" currency. Should not this obliquity attach to the buyer, who requires cash to pay the farmer for the crops, he wants to move out of the farmer's hands? And is not the farmer as a rule quite willing to accept a certified check on a solvent bank in payment for moving any quantity of crops? Does the farmer demand that actual gold coin be brought to his house to pay for his produce? For one such hard gold payment are there not a hundred payments by bank check or draft? Anybody, who has a current credit at his bankers, can draw a check which serves temporarily as currency. Then why is not the bank check more "elastic" than gold?

An "elastic" note currency has been proposed, secured by what is called "commercial paper,"—bills or promissory notes,—in place of the present National Bank notes, secured by government bonds. This would virtually bring back the old unsatisfactory system of bank notes, eternally fluctuating in value, whereas the present notes are always redeemable at par. A much more secure basis for currency than merchant's paper would be warehouse receipts, and even these the frauds of the Eppingers recently showed could be tampered with. The fact is no banking system or currency (governmental promises to pay) system can stand against a universal panic. The essence of banking is that the bulk of the funds banked must be loaned to persons competent to use them reproductively and pay interest therefor. In a moment of panic these funds cannot be rushed back into the bank's tills or government's vaults. Faith in our institutions is the prime foundation for an "elastic" currency, and this is perhaps best maintained by doing as little tinkering or monkeying with the currency as is possible.

One of the troubles with last century's bank note issues was they were entirely too "elastic." One had to consult the "Bank Note Register" to know if his dollar was worth five cents or a hundred. Heaven forfend more of such "elasticity!"

Pacific Grove, Cal., Nov. 12, 1913.

HOME WORK RECORD OF

For Week Ending _____, 19___.

	SUN. Min.	MON. Min.	TUES. Min.	WED. Min.	THUR. Min.	FRI. Min.	SAT. Min.	TOTAL
1. Work in garden								
2. Splitting kindlings								
3. Bringing in fuel								
4. Milking cow								
5. Care of horse								
6. Preparing meals								
7. Washing dishes								
8. Sweeping								
9. Dusting								
10. Bedroom work								
11. Washing								
12. Ironing								
13. Care of baby								
A. Bathing								
B. Brushing teeth								
C. Sleeping with open windows								
D. Going to bed before 9 o'clock								
E. Attend'g Church or Sunday School								
TOTAL								

I certify that the above is a correct record:

_____
Signature of Parent or Guardian.

RECORDS FOR HOME WORK.

THE home record slip illustrated on this page is suggested by Professor Alderman as a guide to teachers who wish to install the home-work system in their schools. It is evident that there will have to be variations in kind of work done, depending upon the conditions surrounding the children. For instance, the work that presents itself to the country boy on a farm will not be the same as that which the city boy will find to do.

And also variations will be necessary according to ages of the pupils, as the six-year-old will not be expected to do hard work or as much of such work as he may do as the older ones.

It will be readily seen that the co operation of parent and teacher will be necessary to the proper installment of the system.

The suggestions below by Professor Alderman will help to get an understanding of the work.

Suggestions for Using the "Home Record Slip."

The regular monthly report card should contain two extra columns—one entitled "Home Work" and one "Personal Care," and in these columns the pupil should be marked on the scale of 100.

One hundred per cent in the home work column would be secured by a daily record of not less than one-half hour of approved work for seven days each week.

One hundred per cent in the personal care column would be secured by daily practice of numbers A, B, C and D for seven days of the week, and for attendance upon some religious service. Twenty per cent could be allowed for each number and 20 per cent for attendance at church or Sunday school.

The matter of bathing should not be interpreted to refer strictly to tub baths, since in large families daily tub baths are impracticable, and inability to make a good showing on the card would have a tendency to discourage.

Different plans of reward for a given number of minutes devoted to work during a week are outlined in the pamphlet, "School Industrial Credits for Home Industrial Work." These, however, may be modified or enlarged to suit. All time, including the half-hour a day and the amount allowed for all other operations, should be counted toward a specified total necessary to earn the reward.

FUN IN ADVERTISEMENTS.

The following advertisements appeared in various papers some years ago:

"Bulldog for sale; will eat anything; very fond of children."

"Wanted a boy to be partly outside and partly behind the counter."

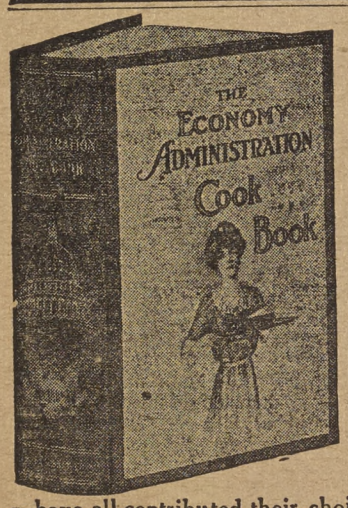
"Widow in comfortable circumstances wishes to marry two sons."

"Animal sale now on; don't go elsewhere to be cheated; come here."

"A lady wants to sell her piano, as she is going abroad in a strong, iron frame."

"Lost, near Highgate Archway, an umbrella belonging to a gentleman with a bent rib and a bone handle"

Northwestern Pacific Railroad Company
Through Marin, Sonoma, Mendocino and Humboldt Counties.
The Land of Opportunity. Literature on Request.
J. J. GEARY, G. P. A., 808 Phelan Bldg., San Francisco Cal.
Run to amount of 40 cents for each person on trip to Mount Tamalpais. Send receipted bill and clipping to above address.



The Ladies of
President Wilson's Administration
Tell How to Reduce the High Cost of Living in
The Economy Administration Cook Book
The most vital subject of the day.
Big Money for Agents
Something Entirely New—
The wives of the President of the United States, Vice-President, the Cabinet Officials, Speaker of the House of Representatives, Senators, Congressmen, Governors, Judges and hundreds of other important women of the day —have all contributed their choicest culinary recipes to make this work a grand success. *The Greatest Seller since the "Titanic."*
Nothing Like It Ever Published—The many unique features such as the cross index to recipes, and especially the biographies of the celebrated contributors, make the work of both national and local interest.
There's a Gold Mine in It for Live Agents—Previous book experience is unnecessary as mere glimpses at the Prospectus showing the multitude of handsome copyrighted illustrations and invaluable recipes by the most prominent people of the day will deluge you with orders.
Send for outfit and full instructions—act now while your own favorite territory is still open.
W. B. Conkey Company
Publishers
Dept. 158 HAMMOND, INDIANA

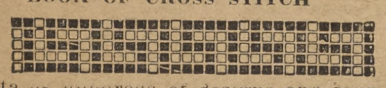
MUCH USEFUL INFORMATION
Can Be Had by Writing to Advertisers in this issue for catalogues, pamphlets and literature which will be mailed without cost.

A Few Kitchen Helps.

To keep cheese moist, wrap it in a cloth dampened in vinegar.

To keep butter hard without ice, set the dish over a pan of cold water. Cover the butter with cheese cloth the ends of which hang into the water on either side. The cloth will act as a wick and keep the butter cold and hard.

BOOK OF CROSS STITCH



Contains hundreds of designs and four complete alphabets. With it we send our catalogue of FANCY WORK. Send 10c silver or six 2-cent stamps. Address,

LADIES' ART CO., 154 Gay Bldg., ST. LOUIS, MO.

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Established 30 Years

Invites you to visit their store.

The largest and most select stock of Jewelry, watches and diamonds in the city.

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We carry the best grades of Table Silverware on the market, both sterling and plated, including the product of all manufacturers who guarantee their wares.

CUT GLASS DEPARTMENT

There is no stock on the Pacific Coast which can excel our extensive assortment of genuine cut glass.

WE ARE DISPLAYING

Especially selected articles suitable for Holiday gifts.

A REPUTATION

built upon thirty years of serving satisfied patrons and reasonable prices.

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Junction of Market, Geary and Kearny Sts. nr. Chronicle Building.

THE HOUSEHOLD DEPARTMENT

NEW AND UNUSUAL WAYS TO MAKE MONEY AT HOME.

By A. May Holladay.

AT FIRST thought it would seem almost impossible for one living in the country or in the thinly settled communities to find many opportunities for making money. Here are some ways which have been tested and found to be practicable:

A little boy living miles from any town, down on the river, made several dollars each week last summer picking tomato worms at one cent each for the fishermen who used them for bait. Incidentally, the tomato vines were greatly benefited and kept free from worms as they would not otherwise have been.

A little neighbor boy, 12 years old, has a constant source of income from walnut meats which he picks out, carefully sorts, and takes to town to the candy kitchens. They are glad to pay his 35c per pound, as they much prefer the flavor of the California black walnut to any other variety for candy-making. The boy gathers large quantities of the nuts, enough to last all year. He does the work of picking out the kernels at odd times, and when he goes to town always has some of the nuts to take. The work is easy and pleasant, and pays well.

Raising lavender is a good occupation for the woman in the country. Get a number of the slips at the nursery, and a little care will repay one for the time spent. The druggists are always anxious to get the real lavender-flowers. Many pretty things may be made from the sticks, or the flowers themselves, and sold either at some bazaar or store, or to friends. I know a girl who sold last year a number of lavender wands and sachets to eastern friends through correspondence. She sent out cards telling what she had to sell and the price. The cold eastern states do not produce lavender, and of course it is natural for people to want what they can't have in their own state.

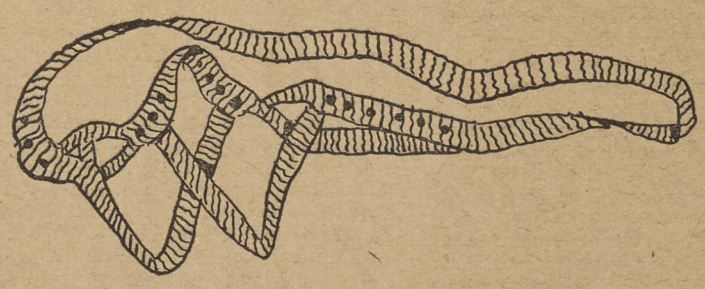
A woman I know lives in a rather thickly settled country community, and owns a typewriter. She makes money by writing business letters and orders for her neighbors, at ten cents per letter. It is surprising, when one looks into the matter, how many women there are who cannot write a business letter. Others have not the time, and are glad to pay the ten cents, for what is a pleasure to this plucky little woman, brave enough to try to earn money without going to the city.

Wouldn't you like to obtain a brass bed for 25 cents if you only had the chance? A girl in my neighborhood found out how to make a cheap white iron bed look just like a brass bed at a total cost of 25 cents. She turned this knowledge to advantage, and is kept busy taking in the dollars from neighbors who saw her first work. She buys gilt bronze (which is not the same as the regular gilt), and mixes it to the right consistency to spread, with the oil that comes with the gilt bronze. It gives a brass finish that cannot be told from brass. Enough for two coats for a bed costs 25 cents, and the girl gets $2 for her work.

CROCHETED HORSE REINS.

(By Mrs. J. Y. Beaty.)

THE illustration shows an original idea in crocheted horse reins which may easily be made from scraps of wool. Scotch yarn or German knitting worsted, Spanish yarn, fourfold zephyr and Germantown wool will all work up into much the same-



CROCHETED HORSE REINS.

sized stitch, and may be used together without spoiling the effect. In conjunction with the yarn use mercerized cotton, to prevent stretching, which would vitiate the usefulness of the reins.

With a fine bone crochet needle and a thread of each material, chain 11, and on the chain work 10 s. c. Work back and forth in s. c. (always taking up the back thread to form a rib) until there are 23 ribs in all. Turn the first row against the last and slip stitch (crochet) them together, forming one of the arm circlets.

Having joined the arm circlet, once more begin to work in ribbed slipper stitch. Continue until 22 new ribs have been formed, then fasten off This is for the short strap just back of the arm .

Count seven ribs along from the joining of circlet and there begin a second strap, workng the first row of it on the eighth rib of circlet. Work 22 ribs.

The 23d rib work as usual, but pick up the stitches through the last row of both first and second side straps, to join them. Then continue to rib until that side of the reins is long enough—about 43 inches from the arm circlet to the end. Fasten off.

Repeat the directions for the other half, joining the two ends before fastening off the second side.

On the arm circlet, on the seventh rib along where the second side strap was begun, commence the front girdle. Make it 24 ribs long, then join it to the corresponding rib of second arm circlet.

For the shoulder strap, begin along the top edge of one arm circlet, picking up seven stitches midway between the two side straps. On these seven stitches make 37 ribs.

Next row, two s. c., skip three stitches, chain 3, 2 s. c., turn.

Next row, skip 1st stitch, 1 s. c. in next, 3 s. c. over chain, 1 s. c. in next stitch. Turn.

Make 3 s. c. in the center for next row, and fasten off. A button is sewed to the front girdle on the side opposite to that on which the shoulder strap is begun, and the buttonhole just formed is passed over it.

Make a second shoulder strap upon other arm circlet, sew bells upon the front girdle and the outer side-straps, and the reins are ready for the small boy's approval.

Criticism may make us hot, but learn to accept it with a smile.

If there is any one thing more than another that depends upon ourselves, it is our home.

IN THE KITCHEN WITH AUNT MARY.

By Mrs. John Y. Beatty.

Santa Rosa, Cal.

I USED to break my back bending over the table to look at the cook book every two minutes when I was baking, but I don't do it anq more. I have what Uncle Dick calls, "A Patent Cook Book."

It consists of a card index of recipes.)The cards are five by seven inches and were purchased at the bookstore. these are divided by guide cards into the following sections:

Biscuits, Beverages, Canning, Bread, Cakes, Cookies, Candy, Doughnuts, Dumplings, Fillings, Fritters, Fish, Griddlecakes, Game, Ices, Muffins, Meats, Menus, Preserves, Pickling, Puddings, Poultry, Pies, Relishes, Shortcakes, Sauces, Soups, Stews, Salads, Vegetables.

Each card has a recipe written upon it and is filed back of the proper guide card. When I want to make a cake I find all of my best cake recipes in a jiffy. When the card I want is sorted out I hang it up on two little hooks on the cupboard door. Each card is provided with holes at the proper distances for hanging.

Perhaps you would like to know what some of the recipes are in my patent cook book. Here are a few of the choicest ones:

Graham Date Gems.

Half cup brown sugar.
Half cup butter.
2 eggs.
1 cup sour milk, to which add 1 teaspoon soda.
1 1-2 cups graham flour.
Half pound dates chopped.
Flavor with nutmeg.

Bake 20 to 30 minutes in moderate oven.

In mixing, stir all the ingredients except the dates into a quart of boiling water. After boiling half an hour, add dates and cook five minutes. Serve hot with cream for breakfast, or pour into a dish and when cold, cut into slices and fry. It may also be poured into individual molds and served with sugar and cream for dessert.

Lady Baltimore Cake.

1 cup butter.
2 cups granulated sugar.
1 cup milk.
1 teaspoon rose water.
3 1-2 cups flour.
3 level teaspoons baking powder.
Whites of six eggs beaten dry.

Cream the butter and beat in the sugar gradually. Sift together three times the flour and baking powder and add to the butter and sugar alternately with the milk and rose water. Lastly, add the egg whites. Bake in three layer cake pans. Put the layers together with a nut frosting.

Waffles.

2 cups milk.
2 eggs.
3 cups flour.
1 teaspoon cream tartar.
Half teaspoon soda.
Salt.
Tablespoon melted butter.

Sift the cream tarter into the flour with the salt. Dissolve the soda in a little hot water. Beat the eggs well. Add flour the last thing.

Stuffed Beefsteak.

Have sirloin steak cut one and one-half inches thick and cut into individual fillets splitting each one nearly through from the side. Stuff with olives, chives and red or green peppers. Fasten with wooden skewers or with tooth picks. Sprinkle with a few drops of French dressing and put on ice or in cool place for several hours. Broil and serve with butter. Garnish with watercress or lettuce when served. Serve on each plate a small boiled onion.

Prune Pudding.

One-half pound prunes.
One pint water.
One-quarter teaspoon salt.
Juice of one-half lemon.
6 teaspoons corn starch.

Soak prunes, simmer in same water. Remove stones and add water to make one pint. Mix starch and sugar and add. Boil 15 minutes stirring. Then add lemon and pour into moulds, and serve with whipped cream.

Figs may be used in the same way.

Before scaling fish, dip them into boiling water for a minute. The task may then be accomplished easier.

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THE HOME DRESSMAKER

NOW that heaven is pouring out its benediction of rain upon us, umbrellas come again to the fore and we learn that fashion dictates this, as well as every other feature of the modern costume. The long, straight umbrella handle which for so many seasons has been the favored style, is losing to the "hook handle." Of course, "there's a reason." Women who have come to appreciate the convenience of having a hook on the umbrella handle which may be hung over the arm if one has both hands occupied, are showing their appreciation of the attractive hook handles featured in the stores by purchasing freely of the new styles, which appear in all the better class of goods. The straight handles continue to be popular in the cheaper grades. Mushroom tops and decorated sterling silver novelty tops are popular, but the keynote of the design is simplicity, for this feature, which is shown so strongly in all lines of merchandise this season, extends to umbrellas and the showy effects are fast disappearing.

The Separate Waist.

There is a never-ending delight in the separate waist, and although its popularity has often been questioned, yet its utility has kept it in vogue, despite the prophecy. With the popularity of the three-piece suit it has acquired even more importance than ever and our illustrations shown this week give one a good idea of how a plain suit may be brightened by the separate waist.

Fashion permits such freedom in the choice and blending of shades that it is not necessary that the blouse should be of the exact shade of the skirt and a portion of it only is required to resemble the skirt in color, for much cream and white net and lace are used in combination with other materials. All blouses are cut low in the neck, the V-shaped being the most favored, and this permits of the wearing of a guimpe when a high neck is desired. Large rolling collars are frequently seen. Vest and bolero effects are much in vogue, and the soft fichu or surplice effect is charming.

Sleeves are extremely large in the arm-hole, three-quarters of a yard around being the fashionable size at present. The most popular style is the kimono and either three-quarters or full length. When worn long they come well over the hand, are finished with a lace frill and are made to fit the arm closely.

Separate waists are among the most economical styles ever designated for women, for if one has two or three waists to be worn with a suit, it varies the whole appearance. Particularly suited to the needs of the business woman, the traveler, the suburbanite, is the separate blouse, which, folded in small space and carried inconspicuously in shopping bag during the day, may be donned in the evening and give the necessary dressy appearance.

We have had Nelrose and American Beauty and Dahlia and Currant Red; the latest is Rambler Rose red — the brilliant, glorious red found in the fragrant clusters of these riotous little climbers. It is the favored shade nowadays with those who like brilliant colors, and, veiled under filmy chiffon, makes beautiful waists. And, instead of the vivid scarlet of the earlier season, Rambler Rose is the chosen shade for pony coats.

Among other favored colors, many used to add a note of contrast to one's costume—are yellow and tortoise shell, ruby, garnet, beige, begonia and tete de negre,—almost dark enough to be called black. This deep-toned shade of brown is charming trimmed with golden brown and yellow or burnt orange. Bottle green, dahlia or currant red and strikingly bizarre and Oriental color combinations are also popular.

In the latest tunic, charmeuse and velvet show the same "flare" which identified the earlier lace of chiffon models. And, instead of being an evening gown, as these light and airy tunic models have hitherto been designed for, the new costume is intended for afternoon wear—for teas and paying calls. And with it milady carries a cane. Not, please you, a "swagger stick," but a full-fledged walking stick, which she uses in quite the same manner as the lords of creation.

Another late feature in tunics is the Florentine. It has no sleeves and is short, being fastened at the waist by a belt studded with precious stones. The hem is slightly stiffened, as the whole success of the garment depends upon its outlines. A love of a model is made in crepe de chine bordered with swansdown. Other belts worn with these Florentine tunics are fashioned of tapestry made in the antique faded shades of ancient tapestries and fastened with buckles of enamel, set with precious stones.

The halo effect of gold tinsel lace on hats is increasing in popularity. Bigger and more pronounced-looking grow the halos. They shimmer and glisten in the sun, giving their wearers the appearance of beautified figures in Russian sacred pictures, or icons.

JUST A PARIS HINT

This coat is one of the latest things in Paris. It is made of chinchilla with a fox collar. It is a dream every woman will appreciate. And it would make a splendid Christmas gift. The suggestion is made thus early because the cost of the coat is pretty high, and it may take the average man several weeks to save enough to buy it.

It will be noticed that the coat is cut on the approved fashion lines that is, the lines of this year. Perhaps by next year the men milliners whose decrees make fashions will have found another way for husbands to expend their money.

With 100 men and one woman present the annual convention of the National Cloak, Suit and Skirt Manufacturers' association opened here Friday. A style exhibit, showing gowns, suits and separate coats on models, will begin today. Friday's sessions were presided over by J. P. Hovland of Chicago.

Crush girdles, ribbon sashes, modified kimono sleeves, hip plaits, plenty of buttons, fancy collars and cuffs and separate coats are some of the things decided by this "supreme court of fashion." Mustard yellow and a deep salmon are going to be among the popular colors.

OUR WEEKLY FASHION SERVICE

5234—Misses' Costume. With lining having long one-piece sleeves perforated for shorter length and high or open neck. Outer front, back and cap sleeves in one piece. High waistline. Attached two-piece skirt with a three-piece upper part. Width around lowed edge of skirt about 1 5-8 yards. Sizes 14, 16, 18 and 20 years. As illustrated, size 16 requires 1 7-8 yards 36-inch dotted material, with 1 5-8 yards 36-inch plain material, 5-8 yard 22-inch chiffon for vest and 3-8 yard 44-inch net for sleeve puffs.

Price 15 cents.

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5366—Ladies' Shirt waist. Without lining. Having high or open neck. Bishop sleeves perforated for short sleeves, or having shirt sleeves. Sizes 32, 34, 36, 38, 40, 42, 44, 46 and 48 bust. As illustrated, size 36 requires 2 yards 36-inch material, with 3-8 yard 18-inch contrasting material for collar. Price 15 cents.

5314—Ladies' Waist. Without lining. Having long one-piece sleeves perforated for short sleeves, adjustable shield and fichu. Closing in front. Sizes 32, 34, 36, 38, 40, 42, 44 and 46 bust. Size 36 requires 2 yards 36-inch material, with 3-4 yard 36-inch material for fichu and 3 1-2 yards plaited net to trim. Price, 15 cents.

5336—Ladies' Waist. With sleeveless lining and having high or square neck. Outer back yoke and sleeve in one piece. Sizes 33, 34, 36, 38, 40, 42 and 44 bust. Size 36 requires 3 yards, 27-inch material. Price, 15 cents.

"THE MIDLANDERS"

By Charles Tenney Jackson

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Synopsis of Preceding Chapters.

Uncle Michigan, an after the war rebel soldier living with another old Confederate captain in the Louisiana swamps picks up Aurelie, a baby girl, astray from an orphan asylum, on the streets of New Orleans, mistaking her for a boy. The old soldiers have been looking for a boy to bring up and educate that he may revive and lead their lost cause. They bring her up to young girlhood and Uncle Michigan and Aurelie find themselves settled near the Iowa river town of Rome with John Lindstrom, a quarry hand, who becomes soured and turns against the world because he is unjustly sentenced to a day in jail for contempt of the court of Judge Van Hart, Harlan's father—Harlan loves Aurelie and meets her outside the village in the evening and induces her to go with him to his mother to confess their attachment.

Wiley Curran, the town printer, helps Aurelie win the beauty prize offered by a metropolitan paper.

(Continued From Last Week)

"Most men are in a state of arrested development in their views of women," she answered, "playthings to be possessed, or parasites to be endured. But a companion, reliant, helpful, demanding freedom, extending it—I thought, Wiley, you would grow to see that, too."

"Yes, yes—" he cried, "I can!" He was fired with her largeness, her faiths. But she left him to go home with a trace of playful cynicism.

"If you will only keep the oncoming way, Wiley!" She shook her head. "But tomorrow I will find you back again, the old indolent chap—Curran of the News."

He waved an ardent protest. When Aunt Abby came home from the Congregational sewing circle, where she was loved for her helpfulness, and reproved for her tolerance of Mr. Curran's beer drinking, she found him staring out at the starlit country.

"Aunty," he murmured, "why do you suppose I never make any money?"

"Some men jest have it in 'em, Wiley; and some jest run country papers." She took off her black and lavender cap, but powdered her nose again, for she had only waddled home to get his supper and then she would be off once more to assist at a church social. As she cooked her nose grew redder, and when she was done with Wiley's supper she powdered it again. It was mortifying indeed to a good rotund lady, who knew that when she came to The Circle to join in the rejuvenating of small Congregational "pants" for the home missionary box, there would be a sniff of two, for some way or other Mr. Curran's shameless beer drinkings would cling to her still. He had a bad way of hiding the bottles in her clothes closet or among her bonnet boxes, and then roaring abominably when her nose on Sewing Circle nights took the sympathetic hue of his own.

"That limb, Wiley T.," she would plead to the church people. "But, sisters, the Lord has been putting up with him for 40 years, and I guess until He forbids I shall too"

"That limb, Wiley T.," knew vaguely that he owed much to this loyal championship in circles he did not enter, just as he did to Janet Vance and her faith in him. Women were always doing for him one way and another. And he had carelessly allowed them; they were a part of the old Dionysian delight of life, the youth he had given so fully, and which even now called to him above this eternal dawdling over the damp paper on press day, the clank of the machine, the grind of work. Getting out the News was like having a baby, so he told Aunt Abby. The press groaned excruciatingly; there was much daubing of ink, flapping of belts, heaving of rollers—then off it came, a squalling brat, this Rome News, without profit to its parents or reverence for the neighbors.

Arne Vance came home from his agricultural school holiday week, and one bleak day brought in a farmer who had a grievance. Somehow or other every farmer with a grievance had been finding his way to the News office for the last 40 years. Bert Hemminger, the insurgent board member from the North Bottoms, was with them. The newcomer took a huge ear of corn from the load of his wagon and wrathfully shook it in the editor's face. He had failed of a prize at the seed warehouse's annual distribution and he knew what was the matter.

"They give it to that Dutch tenant who farms Dan Boydson's west eighty. And what did I get, hey? Skunked—yes, sir—skunked! And there ain't ary ear of my load that ain't better'n Boydston's land can raise. But I know. Boydson's a board member and Tanner's man, and Tanner owns the seed company! That's it, by cracky! Politics, and rotten!"

The editor listened sympathetically. He always did. The farmer roared and flourished his disprized seed ear. He was "agin the tariff" and the administration and everything else. It was rotten when a man couldn't get a blue ribbon on corn like his corn!

Arne Vance fingered Mr. Sourd's product. He chewed a grain and felt over the golden spike. "It's good," he commented, "but the kernels break before they run over the nub, and they're shallow. Ike, some day I'll show you how to judge corn the way we do up in the agricultural college."

The man was suspicious of this fool book farming.

"And let me send a dozen of your ears to the state board," put in Curran. "He's a great man, that secretary. He'll sit down and write you a letter worth all the ribbons Tanner's seedhouse could give you."

Ike Sourds did not know. He was sure there was something crooked about it.

"I tell you what we'll do," exclaimed Hemminger. "This editor, he's going to run for congress in the primary, and we want him to come out and Arne with him, and they can talk politics and seed corn together. Hey, Arne?"

The farmer-student's black eyes snapped. Go? It was a great idea! Hemminger's sad eyes lit. The suspicious Sourds grew interested. "By jinks, if there was anything like that going on in Hemminger's district our district ought to have it, too! We wa'nt much for style, our folks, in Number Five, but Arne Vance can come talk seed corn nd sour soil, and then this editor can get up and whale the plutocrats! It's a right lonesome road out our way, but we take the News and we know something!"

And he and Hemminger went off with a promise. Curran watched the shaggy farm horses steaming in the cool sunshine, the bundled figures on the seat, until the wagon drew into a gap of the hills. They wanted him, did they? After all, his yelling brat of a paper didd find its way out to the lonely farms and was read and believed!

He turned to discover Arne watching him curiously. "You're going, Wiley?"

"Sure!"

"We'll elect you, Wiley! We—and they! Quit your grubbing away in this dinky shop and come out among us! Janet's been seeing things very clearly. There never was such a chance—the county needs a leader. I'm telling you what the young men say over the county. And there's Father Doyle, who's trying to build his church up among the foreigners at the new mine, and McBride, this state labor organizer, who's working to unionize the new factory people around Earlville—none of them care a damn about the old gang in this town—the best families and the courthouse jobs and all that!"

"I know," said Curran quietly. "They've both talked with me—urged me."

Arne's eyes glittered. "Janet—" he muttered grimly. "Her work!"

The editor was musing. Janet, again, Always Janet! She seemed behind every manifestation of his new place in the hearts of men, his awakened ambitions, his power to be himself. The enfranchised and free companion, demanding freedom, giving it; that was what she had said the modern woman could be! He was awakening to this magnificence in Janet. And yet she must love him—she could do that also! And slowly his dream grew to a vision of a love past the common call of sex, a passion ennobled by the riches of her personality. There would be none of the parasitic clinging to a man, the need of sentimentalizing shelter and protection. The helper to power, the counselor to a widening life—this would be the woman to come! This would be Janet!

He met the elder Vance next day, the political farmer, the malcontent, an original Greenbacker, a mugwump, party troublemaker, forever given to standing about the square Saturday afternoon in his moth-eaten, old buffalo coat arguing with the countrymen. He could not have been elected to any office, but he had not soured. His children had inherited his reasoning unrest, but they had disciplined it to achievement.

"Somebody to beat Hall—somebody to beat Hall!" he roared. "Folks say it's comin' to be you, Wiley! I get it everywhere except in the News, and in the banks and warehouses and the courthouse! The county ain't what it used to be—there are mines and factories—and libraries and labor unions! The old gang doesn't realize that. It's you, Wiley, all the kickers want. And I hear you ain't got the money? Ain't some of these new real estate men and boomers over in Earlville close to you for that?"

"Not much. Cal Rice and Thad are in wtih 'em on most of their deals."

Jake went out in the frosty sunlight. "Don't forget," he growled, "that there's a sight of people who ain't in any deals- Arne, let's go home and feed stock with that contraption of yours up in the haymow!" He looked off across the square to the window of the school superintendent's office: "I guess that girl of mine is ready to go home, too!"

Wiley watched the Vances drive off, the three of them in Jake's old buggy. "Jake used to travel to political conventions in the smoker, and, at 12 o'clock pull a basket up between his legs, spread a newspaper on his knees, eat his chicken and sweet pickles, and then pitch the paper out the window, but when Arne comes back from college he eats in the diner and uses a finger-bowl," he told Aunt Abby. "And they have two hired girls at the farm! Janet and Arne make up the price of the dining car and the maids by figuring out soil analysis, or new school methods, and don't bother their heads with picking chickens, or putting up lunches."

"Well, there'll come an end," she warned; "tain't in nature for a farm to stand two hired girls, or even one!"

He laughed: "Get on the band wagon, aunty!" Then behind her, in the fragrant kitchen, he saw Old Michigan warming his leg across the wood-box. Michigan grinned expectantly:

"Done got a letter from our little girl, Mr. Curran! And I done brought it up here first thing for you to read."

"Aurelie." Wiley was conscious of a disappointment that she had not written him. She had sent a postcard from some town, with a blithe comment, but little news, only that everything was all right. Now he reached eagerly for the letter in the old soldier's hands. Aunt Abby stopped her cooking as he tore it open. Then they lost the world in Aurelie's tale of wonders.

"What she done say, Mr. Curran?"

"Fine! Says you'd look good to her, now, Uncle Mich. She's having the time of her life. Everybody's good to her, and helps her, and the McFetridge boys are just grand, and everything's grand." Wiley looked shining-eyed around: "There's the most of it—just grand."

"Wiley," said Aunt Abby severely, "I did hope she'd not get her head turned!"

"Not a bit. She says: 'Uncle Mich, the first night I was scared, and when I walked out there and tried to see over the lights I just wilted—inside! Mr. Gratz stood in the wings with the book, and Hen McFetridge kept waving to me not to cross so far, and Mr. Feldman kept whispering something from the other side, so I guess I must have looked scared. I tried to speak and couldn't say a word, and I looked hopelessly off, and there was Mr. Hanbury having a regular fit because I was going to spoil his play. He kept shouting to himself and dancing around: "Dried—I knew it!" Then that made me mad, and I glared at him, and then I heard Morris Feldman was trying to whisper, and I said, "Father, I am here." And just right, too, Sol Gratz says—just like the haughty young beauty I was supposed to be, who's under suspicion of being a thief. Because I was mad at Mr. Hanbury and his old play! And every time I lost my lines they all helped me—everyone, and you ought to have seen what the papers said!' " cried Mr. Curran—"I wish I'd seen that paper!"

"Go on," said Uncle Michigan, "When's she coming home?"

"Don't say," answered Wiley. "Says the hotels are pretty bad, and the theatres are cold and dirty, but it's just a glory! Oh, lord—Aurelie!"

"Likes it?" queried Aunt Abby, from her doughnuts.

"Says she's got a mission! To uplift the stage! Oh ,lord—Aurelie!"

"But when's she coming home?" quavered Uncle Michigan.

And looking in Michigan's eye, Mr. Curran saw a tear.

"She doesn't say, Uncle Mich. She just says she's sending a number of things for 'you-all' out at the Pocket—with the first money she ever earned! Christmas presents for you and Knute and Peter and the baby, and Albert and Mrs. Lindstrom—and for John."

"And John, he prayed so mighty hard he chased her off the place! Reckon she's the same old girl, Mr. Curran?"

"Sure, I think so, Uncle Michigan."

"Don't reckon this yere stage business'll ever change her a mite, Mr. Curran?"

"Hope not, Uncle Michigan. Darn the smoke—it's getting our eyes, ain't it?" Mr. Curran coughed and spluttered; he didn't want to see the tears on Michigan's whiskers. The old man thumped the wooden leg on the box and against the stove preparing to get out of the house. "Uncle Michigan," said Mr. Curran, "stay to supper and we'll talk about Aurelie. Gee whiz, I hope that little girl makes good!"

"You want me to stay to supper?" Uncle Michigan turned to Aunt Abby—"You're church folks, and I done been an ole whisky pedler Johnny Reb."

"You done been an old fool, Uncle Michigan! You sit right here till supper's ready!"

"Right here till supper's ready!" added Mr. Curran. "Here's some more of this letter—"

"But not any word about comin' home!"

"She'll get home. She says up in Waterloo the comedian got drunk and nearly busted up the show. And that night they had to cut out her big situation."

"What? " gasped Aunt Abby, "cut out her—what?"

"I swear—"

"Well, it can't be serious or they'd telegraphed!"

"I guess so. She says Mr. Hanbury changes his play so much they just can't keep up with it in rehearsals, but that Sol Gratz thinks pretty soon they'll get it all over."

"Get over what—over the operation, I suppose, Wiley?"

"She's picking up this stage slang so fast she must be getting on. I swear, it's a fine letter."

Aunt Abby was peeking at it over his shoulder. "What's that? She asks if any one ever hears from Harlan Van Hart?"

Wiley laughed. "Yes. She—sort of knew Harlan." He folded up the letter and handed it to Uncle Michigan, who stared at it as if it was a jewel.

"I reckon," mumbled Uncle Michigan, "you done better keep this in your safe at the office, Mr. Curran."

"That safe rusted shut in '96, Uncle Mich—the time the creek flooded the News office—and it's never been opened since."

"Well, you better keep this letter in the clock, Mr. Curran—or somewhere. I wouldn't lose it for the best leg I got." He handed it back to Mr. Curran, and the editor locked it in the clock case. "When I git lonesome, I'll come up here and we'll read it all over again. Kind o' lonesome at the ole place. John, he's sourin' on the world. Keeps the boys cuttin' brush. And the baby's ailin'. And the woman's frettin'. Seems like the sun don't shine so bright since Aurelie went away."

"Don't worry, Uncle Mich. She'll come back rich and famous, and everybody'll be happy, and she'll give a show in the tin operahouse."

Uncle Michigan's eyes shone again. "Just as Ole Captain Tingletoes prophesied down in Louisany! She'll done grow up to occupy the land!"

Mr. Curran's eyes shone, too. He had been told Aurelie's fantastic story, oh, these many times! He had gilded it, enshrined it—loved it.

"Our little girl, Uncle Mich!" he cried. "Out in the big world fighting her way, and not being scared! I never think of how she came to me but I want to gather her up and shelter her, protect her"—he stopped slowly—"love her—" he sighed. Then he turned away from them and looked down the hill to his shop. "Eh, well! I reckon I am the man who is in a state of arrested development concerning women!"

(To Be Continued)

Sugar beets rank first, rutabagas next, then pumpkins. Four to five pounds daily to each sheep will improve their general health and make the meat tender and juicy.

POULTRY AND PET STOCK

A REPLY TO MR. KEGLEY'S FORTUNES FROM HARES IN BACK YARDS.

By Chas. N. Ueidhardt.
Member of Pacific Pet Stock Association.

WELL, it reads like a fairy tale and I doubt very much that fortunes from $5000 to $10,000 will be made on one acre of ground. There might be some people who will make some money out of rabbits at present, but will this keep up? Suppose 50 breeders would bring every week 200 hares each or 10,000 together to the San Jose free market? You could give them away, even the San Francisco market would be overrun. Since more people started raising rabbits the price for a pound dressed rabbit went from 50 cents down to 35 cents at the San Jose free market. And when all these rabbit factories are working ,we might sell rabbits for 5 cents and 10 cents each, and that would mean the end of it. Who wants to pay 35 cents per pound for rabbit if they are kicking about 30 cents per pound for turkey? At the time of the chicken boom a few years ago Mr. Philo told the people to sell the broilers for 35 cents per pound. Did you ever get that much? Well, the same thing happens right now with rabbits. They tell you to sell a pound and a half rabbit for 50 cents. Just try it. Listen, not only one, but 150 every week. Besides the money in the droppings, it almost pays to raise droppings only. This is enough said about that fortune-making out of rabbits. Now about the rest.

First the feed: They abolish green feed. Why? Because rabbits weaned at 4 weeks of age and receiving the mother's milk for about two weeks only are not strong enough to digest the green feed; therefore slobbers, diarrhoea, etc. This wit end bugs business is humbug. The spotted liver never comes from green feed. The spots are encysted parasites with the name ..... That green feed makes the meat slimy and tasteless is ridiculous. Who stuffs the jackrabbit with hay and rolled barley? Nothing better but plenty of greens, some hay and grain, and you need no tonic nor appetizer. Scab ear is no disease. It is raised by a mite with the latin name Coccidium Gregarinosum, some relation to the mite who raises scaly leg on chickens.

Now about the price of the feed (hay and barley)—5 cents the first three months, $3.12 per year, or $3.07 for nine months. Pretty high for a stew.

Second, the breed: It is of no use to say this kind or that kind of rabbit has better flavored meat. It is all in the feed and care. Cabbage never produces good flavored meat, but all the weeds, herbs and grasses you can find growing.

At present the Flemish Giant, the Belgian hare and the New Zealand rabbit are in the foreground. The first two are standard rabbits, while the last kind are crosses respectively, off-colored Belgians. Therefore the Flemish and the Belgian are in the lead, especially the Flemish on account of his sire and quick growth. He is the meat rabbit par excellence. Every kind of rabbit is good to eat; never mind the color of his fur.

Raising rabbits on account of the high meat prices means to raise your own supply. Don't try to cut down your meat expenses by buying rabbits at 35 cents per pound.

A good way to start with rabbits is to buy a few of thoroughbreds, either Flemish or Belgian or English or Dutch, Himalayas or any other kind. Breed your does when fully matured; let them raise six youngsters, wean them with six weeks, and breed your doe again. From the youngsters you sell the best for breeders and eat the rest. There will be a demand for thoroughbred rabbits all the time. The expense for feeding a few rabbits amounts to very little, as you can raise and gather most of the feed.

My way of feeding is: Mornings, greens and water; evenings, greens, hay and grain. Does with young receive grain and hay at the morning feed, too. My rabbits are bedded on straw, have a spacious hatch and look as contented as rabbits can look. My young Flemish weigh from six to seven pounds when three months old and my stock is in best condition. Everybody can do the same with little trouble.

There are no rabbit factories in Germany; everybody is a fancier; over 30,000 belong to the Rabbit Breeders' association. Let us follow their example.

Shade up the runs frequently. Hard baked earth become very filthy and is a breeder of disease germs.

Wheat and crushed oats this hot weather are better than corn. Give plenty of green feed.

THE BRONZE TURKEY.

ORIGIN and Size—This variety figs. 2 and 3) holds the post of honor. As already stated, it probably originated from a cross between the wild and the tame turkey. Its beautiful rich plumage and its size have come from its wild progenitor. To maintain these desirable qualities, crosses are continually made. In this way the mammoth size has been gained. Their standard weight ranges from 16 to 36 pounds, according to age and sex. robably more of this variety are grown each year than of all others. They have been pushed on all sides almost to the exclusion of the others until within a year or two. If possible the Bronze turkey has been developed too much in the direction of size. While size, within reasonable limits, is to be desired and encouraged, when it is confined to length of thigh and shank, it is a gain of weight with but little additional value.

ADULT BRONZE TURKEY, MALE.

Coloring—The coloring of this variety is a ground of black blazoned or shaded with bronze. This shading is rich and glowing, and, when the sun's rays are reflected from these colors, they shine like polished steel. The female is not as rich in color as the male, but both have the same color and shadings. Much of this richness of color is lost through inbreeding, as it is improved by each cross with the wild specimens. Of all our domestic fowls none suffer from inbreeding so much as turkeys. This should be guarded against at all times, if it is hoped to gain the best results.

Selection of Breeding Stock—Naturally the Bronze turkey should be the largest in size, the most vigorous in constitution, and the most profitable to grow. This would be the status of the variety at present were it not that too little attention has been given to the selection of the females for breeding stock. It should be fully understood that size and constitutional vigor come largely through the female, and, to have this influence to the fullest extent, well-proportioned, vigorous females in their second or third year should be selected as breeders. Do not select the very large specimens for this purpose; those of a medium size are usually the best. Discard the undersized females at all times, as they are of but little value as producers. Length of shank and thigh ,if out of proportion, should not be mistaken for size; full-rounded body and breast indicate value most clearly; size and strength of bone indicate constitutional vigor, which should be maintained through the selection of the very best at all times for producing stock. When special care is given to the selection of the breeding stock, and the grower bears in mind those profitable market characteristics—compactness of form, length of breast and body, and constitutional vigor the most satisfactory results may come from the growing of this variety.

Don't allow over-crowding in the pens, or the growing stock will be injured. Weed out all poor pullets and cockerels.

THE ANGORA RABBIT.

By D. E. Caldwell, Los Angeles.

THE Angora rabbit is peculiar to itself, occupying a distinct place in the rabbit fancy on account of its length of coat.

The variety is supposed to be indigenous to Asia Minor and Persia, as are other animals of the "Angora" type, such as cats, goats, and sheep. The Angora is often spoken of as a lady's rabbit, as the fair sex has been well represented at the various shows in classes provided for this interesting variety.

To the non-fancier, no rabbit appeals more strongly than the Angora, and to the casual visitor it is by far the greatest attraction in the fur tent at the shows. They look so tempting that frequently parents purchase them for their children as pets.

Housing.

Angora rabbits naturally require plenty of room, and conditions of absolute cleanliness.

Open front hatches should be used, and plenty of fresh air allowed in the rabbitry.

Never keep Angoras in a hutch underneath other rabbits unless your upper floors are perfectly dirt and water tight. If you have more than one variety of rabbits keep your Angoras in the top tier of hutches.

Feeding.

The same food as given to other varieties is suitable for Angoras and no special instructions on this subject are needed. As bone and size are both good points, rolled barley, oats or wheat should be fed once a day.

Selection.

One great point in favor of the Angoras is the comparative ease with which winners can be bred.

If a beginner has the right "Fancier" spirit; if he purchases his stock from a reliable breeder, and gives the necessary time and care to his pets, he is just as likely to breed prize-winners as the old-time breeder.

The best plan for a beginner is to purchase from an actual breeder a pair of youngsters two or three months old, or a doe already bred.

The latter is always a safe course to pursue, as it is not often a breeder of repute is himself breeding from a doe that has not some pretensions to quality and the prospect of a successful progeny.

If you can afford it, and the outlay should not be prohibitive, purchase both the doe and the pair of youngsters, and you will then have all that is necessary to form a small stud of your own.

Do not be put off with a long thin-boned specimen.

The limbs should be short and strong, and the body as round and plump as possible.

Breeding.

Three litters from each breeding doe in the year should produce as many youngsters as can be conveniently attended to.

The litter may be examined one or two days after birth, as they can be handled without much fear. Angoras, as a rule, are excellent mothers, and rarely resent the necessary overhauling of their young.

The youngsters should remain with the doe until they are six weeks old, when the doe may be taken away with safety.

The youngsters may remain together until they are ten weeks old if necessary. A little experience will quickly enable the novice to pick out the most promising youngsters. Full-grown specimens should have fur as long as possible and of one uniform quality, fine and soft, and eyes pink, bright and bold.

Have a dust-bath out in the sun.

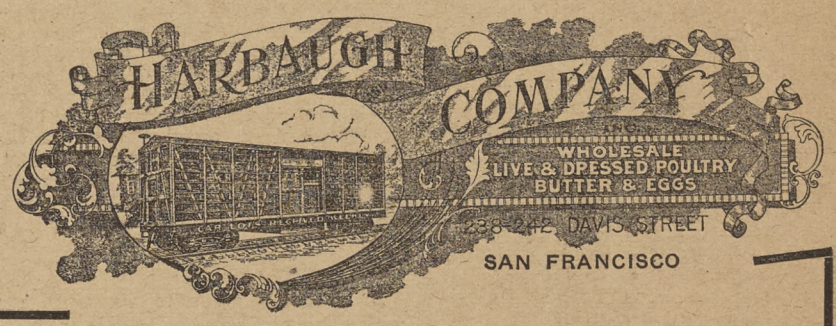
Separate the young cockerels from the pullets.

Oats and wheat contain a good percentage of the elements necessary to build bone and muscle. The former especially is one of the best poultry foods to be had.

Molting Hens

require a good tonic and conditioner to keep them in health and get them laying again quickly.
COULSONS No. 3 CONDITION Powder will do it. Write for particulars and special delivered price.

COULSON CO.
Petaluma, Cal.



MR. POULTRY RAISER:—

WHY NOT SHIP YOUR POULTRY TO PEOPLE WHO MAKE A SPECIALTY OF HANDLING POULTRY?

We are not SPECULATIVE DEALERS, who sell at ONE PRICE and remit at ANOTHER. We do a strictly commission business, remitting at actual sales (or at such prices at which your stock sells). When placing your poultry with us to sell you place it among competitive buyers, thus assuring sales at full market value.

The General Market price, or at which our sales were made week ending Nov. 8, 1913, were as follows.

	Per lb.		Per lb.
Broilers, under 1½ lbs.	27@30c	Small Hens, under 3 lbs.	15c
Broilers, 1½-2 lbs.	23@25c	Medium Hens, 3-4 lbs.	15@16c
Fryers, 2-3 lbs.	19@20c	Large Hens, over 4 lbs.	16@17c
Young Roosters, 3 lbs. over	18c	Young Pekin Ducks	20@22c
Live Young Turkeys	22@24c	Fat Young Geese	15@16c
Dressed Young Turkeys	24@28c	Squabs, per dozen	$2.00@3.00

Broilers not so plentiful and prices are firm. Good hens are in good demand. Ship to arrive Tuesdays, Wednesdays and Thursdays of each week. CULLS AND POOR STOCK sell on their merits.

We especially want your shipments of **Live and Dressed Turkeys** each week. Will need 5000 head for **Thanksgiving** trade.

We handle more poultry on consignment than any two houses in San Francisco. WHY?

This advertisement will appear in this paper exclusively for one year, and will be our method of quoting as nearly as possible the poultry market in general.

We solicit your correspondence by wire or letter.

(Mention this paper)

POULTRY CAN BE RAISED IN BACK YARD WITH PROFIT AND PLEASURE

Small Outlay and Little Work Can Bring Returns Worth the Trouble

Rose Comb White Orpington an Excellent Table and Laying Fowl

By W. G. KRUM
State College of Agriculture, Cornell University, Ithaca, New York

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Backyard and other "waste" spaces in cities and villages can be used to advantage by raising poultry in a limited way.

How a small boy made a good profit out of seven hens is told in the accompanying article. Suggestions are given, too, as to how any one with a little care and work and a small outlay of money can help defray the cost of living in a similar manner.

Naturally, good judgment must be used, but by observance of a few very simple rules, an ample return can be secured for the trouble taken.

Mr. Graham shows the Rose Comb White Orpintong, a valuable member of this popular and famous family.

THERE are many unsightly back yards in cities and villages now being used as dumping grounds and growing only crops of weeds, which detract not only from the general appearance of the home, but also from its market value, and are often the source of sickness and disease.

These might be made attractive and at the same time bring in a good profit to the owner by producing for family use and for the market one of the greatest necessities—high-grade fresh eggs.

No one should, however, make the mistake of thinking that a backyard poultry plant is a gold mine, or requires no care, although it is possible to make a good profit for the time and money invested as well as adding to appearances and the value of the property.

As an example of an ordinary backyard poultry plant, a 12-year-old schoolboy, in the city of Elmira, New York, whose father built him a small, neat poultry house in the back yard, secured in the past year, the following results:

Cost of building material	$ 8.10
Cost of fencing material	2.50
Cost of other equipment	.80
Cost of 7 White Leghorns Hens	7.00
Total investment	$18.40

RETURNS.

930 eggs (average per hen 133), valued at retail prices	$27.80

EXPENSES.

Interest on investment at 5 per cent	$0.92	
Feed, etc	10.18	
Depreciation in value of stock, 20 per cent	1.40	
		12.50
Net profit for labor		$15.30

These hens had table scraps from a family of three, thereby saving on the feed bill.

For a Larger Family.

For a larger family, one should build a neat house, 8 feet by 8 feet, holding 15 to 18 hens. The building material, including gravel and cement for a concrete floor and foundation, also paint to match the home, cost from $20 to $25. This does not include labor as some member of the family may be able to do the building.

This house should be 5 feet high in the rear, and 7 1-2 feet in the front, so as to be convenient for one to do work in and should have well-arranged windows so as to allow the sunlight to reach all parts of the floor some time during the day. The floor should be of concrete if possible, but never a dirt floor as it is too insanitary. Where one has several lots of one-half an acre it is profitable to keep 100 hens, using a house 20 feet by 20 feet.

It is a good plan to have two yards in order that the hens may be changed around into one yard while the other is being dug up and sowed to oats, rape or rye to furnish green food and remove danger of contamination; or the poultryman can make a frame, 4 feet wide of old 6-inch boards, set edgewise, over the top of which is nailed 1-foot mesh wire netting. This can be placed over some part of the yard which has grain growing underneath, the hens only being able to pick off the tops as they grow through the wire netting.

Too many people fix up any old box or building as a so-called poultry-house which is more of an eye-sore and detriment to the place than a weed patch or garbage pile.

The reason why so many back-yard poultry plants are failures is generally the use of poor grade of stock, low in vitality; too many birds congested on a small place and insanitary conditions or lack of care.

It is impossible to run a large poultry farm on a small area and often where a small number would pay a good profit.

Choosing the Stock.

In choosing stock to start, do not waste money on poor cheap hens, as they will not pay. Look for birds well-grown, that are in good health and have strong vigorous constitutions, and of a good heavy type rather than the type built for heavy meat production, the latter type being best for excessive meat. If you keep Leghorns or egg types it is a good plan to preserve the best hens two or three years. College experiments would indicate that about one-eighth of the best Leghorns lay more eggs in the third year than in the first or second year, making it unnecessary to raise as many pullets as formerly.

Do not keep more than one breed of birds as different hens do not do well together. The more active ones get more than their share of the food and consequently take advantage of the slower ones.

Then if you have a good grade of thoroughbred stock, there is always a chance to add to the profits by selling eggs for hatching and day-old chicks at a good price, the demand for the latter in most sections exceeding the supply.

If you have good grassy land upon which to grow young chicks, they should be hatched early, which in a climate similar to New York state is from March 15 to May 15, for American breeds, and April 1 to June 1 for Mediterranean breeds. If the range is limited, it is a good plan to keep them until they are old enough to be transferred to colony houses when they might be farmed out; that is, taken to the country and a farmer hired to care for them until nearly ready to lay.

By this method they will grow larger and with a greater laying capacity than if grown to maturity on a small city lot.

Feeding Back-Yard Hens.

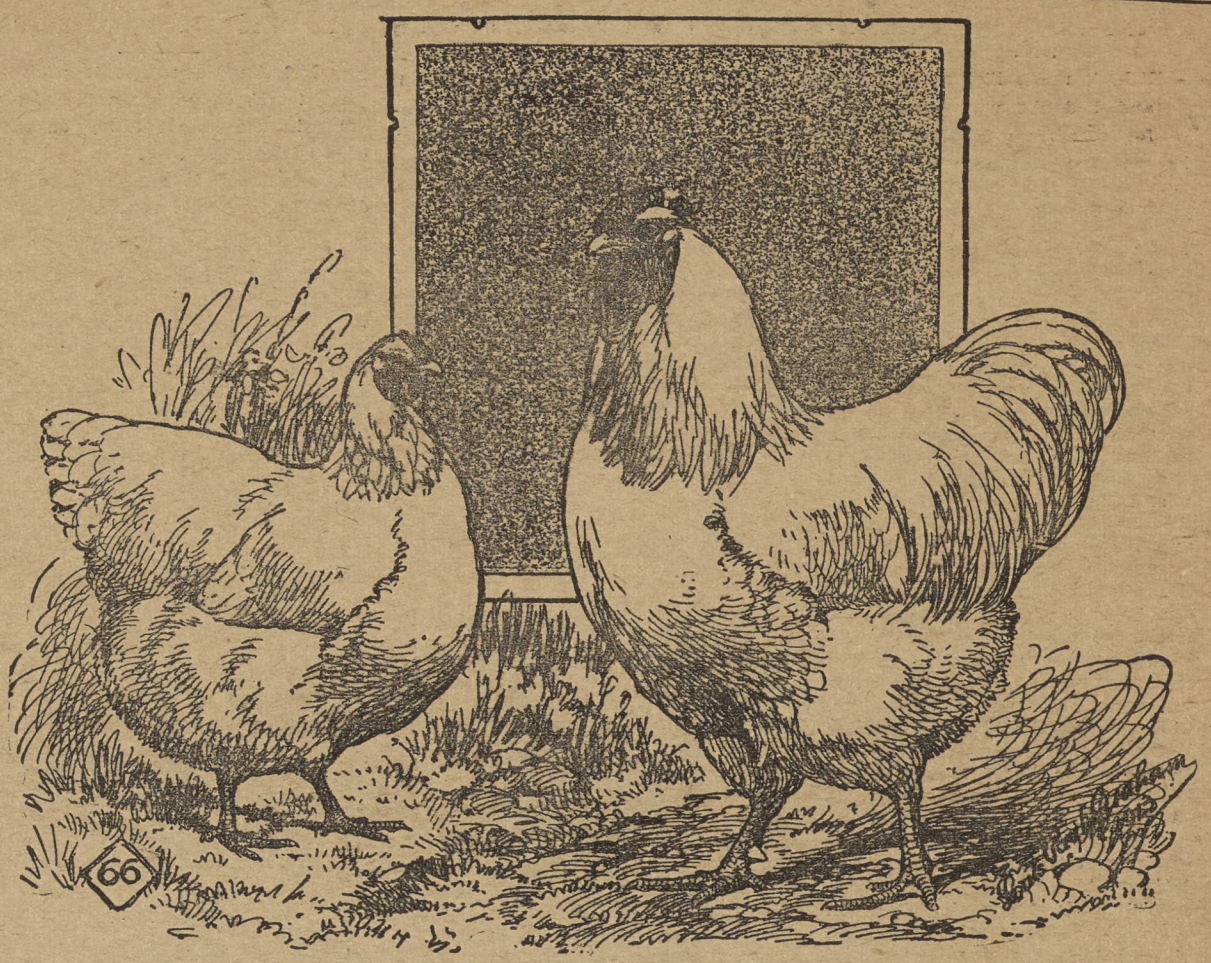
In feeding the back-yard hen greater care is necessary than when feeding on the farm, as she has less chance to exercise, which is one of the essentials of good health. Also, the farm hen can pick bugs, seeds and green food which adds greatly to the variety of her rations.

In order to encourage exercise, it is a good plan to mix several kinds of grain, such as wheat, corn and oats, and feed in a deep litter, giving in the morning never more than a pint to 30 hens when very hungry, and if their crops still contains grain left over from the previous day, so that they do not come to breakfast hungry, they need no food.

At noon they should be given green food and scraps from the table. Also place before them, from noon to night, a dry mash in a self-feeding hopper. This to be closed at night, and the hens given all the mixed grain they will clean up in 15 minutes.

Grit, shell and water should also be available at all times and when green food in the form of beets or cabbage cannot be obtained, you should sprout oats or other grain for this purpose.

With good stock, neat houses, wholesome food, properly fed, and the yard kept clean and sanitary, there should be no reason why the city or village family should not help to keep down the high cost of living, and afford out-of-door work to some member of the family who may be in need of such diversion.



ROSE COMB WHITE ORPINGTONS

This variety of the now famous Orpington was one of the first to be produced, and, for a time, shared the growing popularity of the others. As in all other breeds, however, it dropped behind in numbers due to greater popularity of a single comb over a rose comb. It is an excellent table and laying fowl and has given great satisfaction to its breeders.

Another of the Now Famous Orpingtons

By LOUIS PAUL GRAHAM

Copyright 1913 by the Eugene McGuckin Company

This is one of the subvarieties of the Orpington and the credit for its origin belongs, as does that for all the others, to the late Wm. Cook. His single comb Orpingtons in all colors promised and have proved to be very popular with fanciers and market poultrymen within the United States and Australia as well as in England. During their production Mr. Cook anticipated that many would object to raising the single-comb varieties because the cold and frost would more easily affect them, preventing laying and causing sickness and disease. To offset this prejudice he originated at the same time rose-combed varieties of all his Orpingtons. These have been but mildly popular and have never attained the widspread following that has been the luck of the Single-Comb Orpingtons.

The subject of this sketch, Rose Comb White Orpingtons, were possibly the very first of all the Rose Comb Orpingtons. Mr. Cook used the famous old Rose Comb White Dorking in the production of his White Orpingtons and a large number of rose combs were raised as well as single combs. In fact, the Rose Combed White Orpington today bears a striking resemblance to its forefather, the Dorking.

Popular Orpington.

Of all the Rose Combed Orpingtons the white is the most popular. In some sections, notably where the weather is severe and the thermometer liable to go very low in winter, it is widely bred and has attained considerable popularity as a winter layer. In all other ways—in size, growth, early maturity, laying and table qualities it is equal to the single comb white.

Many excellent specimens are exhibited in our poultry shows, but as yet they are not quite the equal of the single combs in shape and color.

Full-grown specimens weigh from 8½ to 10 pounds for males, and 7 to 8 pounds for females. They have established a reputation for having tender, juicy flesh. They have white skin, legs and beak, and are very full breasted. Their plumage is white in all sections, which contrasts sharply with their blood-red combs and wattles and the green of a nice lawn or meadow.

This fowl is in good market condition at all ages from broiler size to roasters, and, in fact, makes them always useful in the home flock or always marketable when raised in large numbers.

Origin of Varieties—Our domestic turkeys have all been bred from the wild turkey of the United States and Canada and the wild turkeys of Mexico. Climatic conditions have prevented the Honduras, or Ocellated, turkey from playing any considerable part in bringing the domestic turkey to its present state of development. The wild turkey of North America has for the most part been used as the foundation from which size and vigor in our domestic stock have been gained. The lighter shades of color found in the Mexican turkey may have lent their aid in the markings of the Narragansett. As to the origin of the White variety, nothing that may be classed as authentic is recorded. The Blacks may have come from either of the wlid varieties as sports, and the same may be said of the Whites. We know that white individuals have come as sports from both the Bronze and the Narragansett varieties. Such sports do not have the pink shank that is demanded in true-bred Hollands, but, when crossed with them, may be brought within color demands through selection.